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FISHERY LEAFLET 371

United States Department of the Interior, Oscar L. Chapman, Secretary
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FISHERY LEAFLET 371

Washington 25, D.C. January 1951

JAPANESE WHALING INDUSTRY PRIOR TO 1946

by
William M. Terry

Note: This report is a republication of Report No. 126, issued March 1, 1950, by the Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers, Tokyo. Reproduced with the permission of the Civil Affairs Division, United States Department of the Army.

NATURAL RESOURCES SECTION
REPORT NUMBER 126
1 March 1950

JAPANESE WHALING INDUSTRY PRIOR TO 1946

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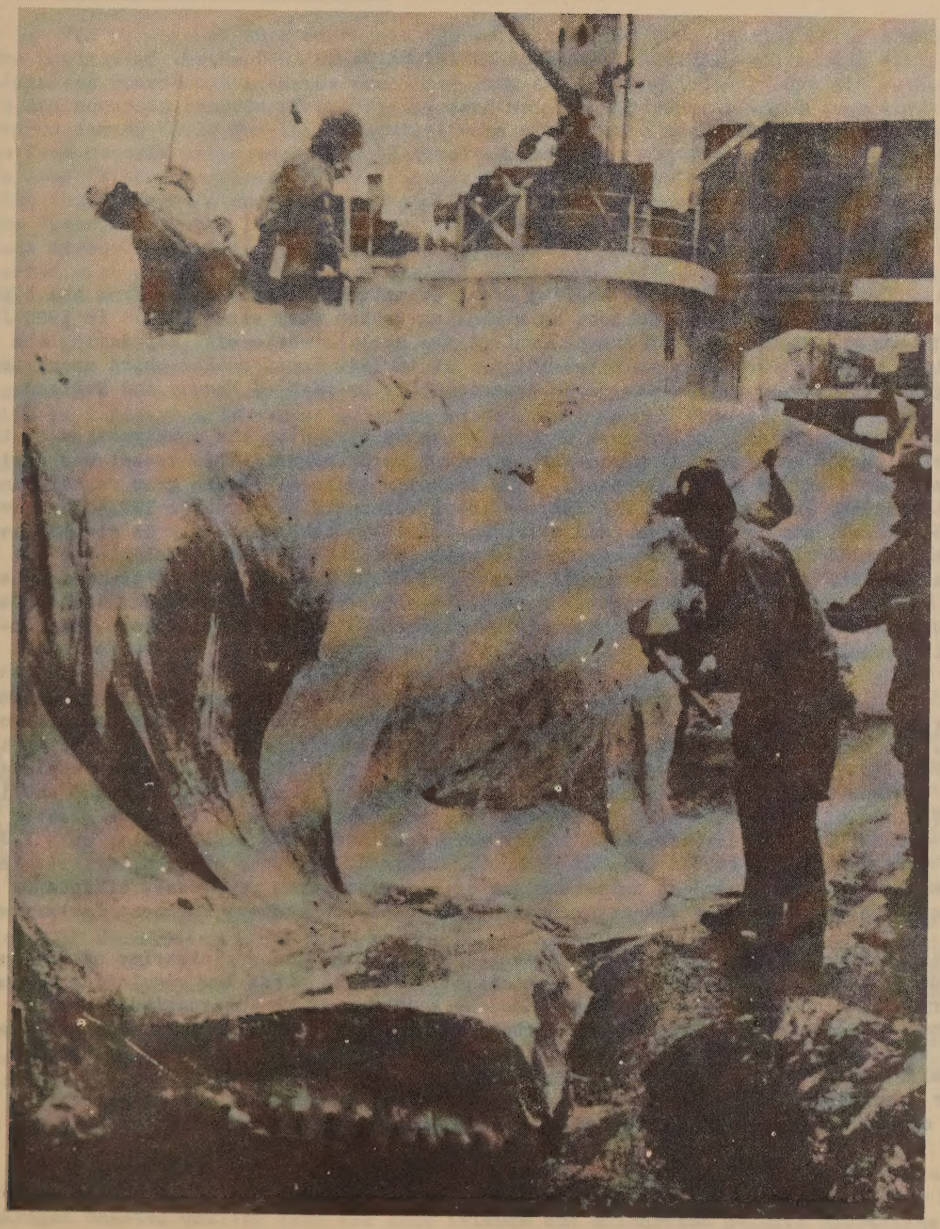


WHALING OPERATIONS ON A FLOATING FACTORY IN THE ANTARCTIC

NATURAL RESOURCES SECTION
REPORT NUMBER 126
1 March 1950

JAPANESE WHALING INDUSTRY PRIOR TO 1946

by
William M. Terry 1/

SUMMARY

1. The history of Japanese whaling as an organized industry dates from the 17th century, but Japan has been prominent as a whaling nation only since 1934. In 1930 Japanese whalers produced less than one percent of the world's whale oil, but during the following decade efforts were so intensified that in 1940 Japan ranked third among the whaling nations of the world, its catch exceeded only by that of Norway and England.

2. The modern era in Japanese whaling began in 1899 with the construction of the first steel whale catcher boat armed with a modern harpoon gun. This vessel was designed for use in coastal and colonial waters. The industry in local waters grew rapidly until 1910, thereafter remaining at a fairly constant level until 1945. From 1911-45 an average of 1,661 whales, mostly sei, fin, and sperm whales, were taken annually in coastal and colonial waters. Production records for the years prior to 1932 are incomplete, but records for 1932-45 show that an annual average of 25,300 metric tons of products was obtained from these whaling operations. Meat and blubber for domestic consumption were the major products. Oil extracting equipment was primitive, and sperm oil alone was commercially important.

3. Pelagic whaling in Antarctic waters began in 1934 when a small floating factory was purchased in Norway. By 1938 six Japanese factory ships were operating in Antarctic waters, and during the summers of 1940 and 1941 a Japanese factory ship operated in the North Pacific. During seven seasons in the Antarctic, from 1934-41, Japanese whalers took 32,840 whales, or 22,002.8 blue whale units, with products amounting to 408,659 metric tons, 356,500 of which were oil. Blue, fin, and humpback whales made up the greater part of the catch. The two northern expeditions were conducted on a small scale; only 1,252 whales were taken, and 14,866 tons of products obtained. Because of peculiarities in operating methods and an imperfect understanding of oil extraction processes, efficiency of Japanese floating factories was never equal to that of the average European factory ship.

4. Control of the industry was exercised in turn by three ministries of the Japanese Government, beginning in 1909 with the promulgation of the first law regulating the whaling industry. The Japanese Government never became a signatory to international whaling conventions, but Japanese law did impose certain restrictions such as minimum lengths, a closed season, and closed areas. In addition, the law limited the number of catcher boats which might operate in coastal waters. These controls were generally less stringent than similar regulations contained in international whaling agreements, and as a result a large number of whales presumably protected by international conventions were taken by the Japanese.

1/ This report was prepared by William M. Terry, technical consultant, Fisheries Division. Miss Ada Espenshade, Fisheries Division, made the preliminary compilation of data.

INTRODUCTION

1. Purpose, Sources, and Scope

The purpose of this survey is the collection and presentation of available data on the history of systematic Japanese whaling operations prior to and during World War II. The Japanese Government agencies concerned with the whaling industry did not maintain complete and accurate records of operations, and many of the records which they did keep were destroyed during World War II. Therefore much of the data used in this report has been drawn from records prepared by the whaling companies and the Japan Whaling Industry Fisheries Assn (Nippon Hogeigyo Suisan Kumiai), and from available reports of government whaling inspectors who accompanied expeditions to the Antarctic. These data were compiled by the Fisheries Agency (Suisancho) of the Ministry of Agriculture and Forestry (Norinsho) without direct supervision by Occupation personnel. The statistics, particularly those concerned with production, probably are not completely reliable and should be considered approximate.

Data are neither sufficiently complete nor sufficiently reliable to be used as the basis of a comprehensive survey of all Japanese whaling operations. This report therefore has been limited mainly to presentation of the available statistics, in order to provide an indication of the size of the whaling industry in Japan for comparison with that in other nations. Caution should be exercised in drawing other than general conclusions.

2. General

Although whaling in Japan has a long history, with organized operations in coastal waters dating from the 17th century, oil produced by Japanese whalers has offered serious competition in European markets only since 1936. In 1930, with the industry limited to coastal and colonial waters in the North Pacific, Japan's whale oil production amounted to less than one percent of the world's total. By 1938, however, its production had risen to almost 12 percent (Table 1), and in 1940 its catch was exceeded by that of England and Norway alone.

Whaling in Japanese home and colonial waters grew rapidly from a primitive fishery to a modern, mechanized industry during the years from the end of the 19th century to 1910. Thereafter it remained at a relatively constant level. It was overshadowed in the years immediately prior to World War II by pelagic operations which expanded rapidly after being undertaken for the first time in 1934 (Table A, page 8). From 1934-41 Japanese floating factories and catcher boats operated in both the Arctic and Antarctic oceans, as well as off Kamchatka and the Kuril Islands.

Unlike other major whaling nations, prewar Japan was not an important market for whale oil. Japanese pelagic whalers provided a small quantity of meat for domestic consumption and oil for export to European markets to obtain foreign exchange. The products of coastal and colonial operation, mainly meat and blubber, were consumed in Japan.

During World War II Japanese whaling was greatly curtailed. Pelagic operations ceased after 1941. Operations continued off the coast of Japan and a few of its colonies but declined, especially in 1945.

3. Post-Surrender Whaling Operations

In late 1945, with Japan an occupied country suffering from a critical food shortage, particularly in proteins and fats, the Supreme Commander for the Allied Powers encouraged coastal whaling from the home islands and authorized pelagic operations in the Bonin Islands.

In 1946, 1947, 1948, and 1949 Antarctic whaling expeditions were authorized as emergency operations to permit Japan to produce much needed protein foods and edible oils, using available personnel and equipment. The authorization specifically stated that no precedent for future pelagic operations was implied. For purposes of comparison with prewar operations, whaling production and catch in the years after hostilities ceased are summarized in Table B, page 8.

TABLE A. - JAPANESE WHALING OPERATIONS, 1934-41		
Region and Season	Number of Whales Taken	Total Products (metric tons) a/
Antarctic waters		
1934-35	213	2,034
1935-36	639	7,589
1936-37	1,965	26,409
1937-38	5,564	66,204
1938-39	7,540	85,142
1939-40	6,971	101,158
1940-41	9,948	130,125
Northern waters b/		
1940	673	7,224
1941	579	7,642
Japan and colonies		
1935	1,771	27,728
1936	1,814	28,513
1937	2,050	29,259
1938	1,979	26,574
1939	2,298	26,109
1940	2,035	24,436
1941	2,349	30,659

a/ One metric ton equals 2,204.6 pounds.
b/ Whaling in northern waters was conducted during these two years only.
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE B. - JAPANESE CATCH AND PRODUCTION IN ANTARCTIC AND COASTAL WATERS, AFTER 1945

ANTARCTIC WHALING

Season	Blue	Fin	Blue Whale Units a/	Sperm	Total	Total Products (metric tons)
1946-47	690	474	927	1	1,165	34,000
1947-48	710	608	1,014	2	1,320	46,000
1948-49	631	1,014	1,138	0	1,645	57,000

COASTAL WHALING

Year	Blue	Fin	Sperm	Sei	Humpback	Right	Total	Total Products (metric tons)
1946	8	232	1,029	574	20	1	1,864	23,845
1947	34	257	1,159	533	9	0	1,992	28,634
1948	50	179	954	638	11	0	1,832	26,816

a/ One blue whale unit equals 1 blue, 2 fin, 2.5 humpback, or 6 sei whales.
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

PELAGIC WHALING

1. Antarctic

Japan's participation in pelagic whaling in Antarctic waters dates from the 1934-35 season when the company now known as Japan Marine Products, Ltd (Nippon Suisan Kabushiki Kaisha) purchased a 10,000 gross ton Norwegian floating factory, the Antarctic, and five catcher boats. With the aid of Norwegian technicians, the company operated the factory ship and three of the catchers in the Antarctic while en route to Japan from Norway. Renamed Tonan Maru No 1, the ship operated in Antarctic waters during the 1935-36 season with five catchers, and every season thereafter until 1941. In 1936 a second company, the present Ocean Fisheries, Ltd (Taiyo Gyogyo Kabushiki Kaisha), entered the industry with the floating factory Nisshin Maru No 1. The Japanese whaling fleet grew rapidly thereafter, and by late 1938 six factory ships belonging to three companies were in operation.

During the 1938-39 season Japan Marine Products, Ltd operated with the Tonan Maru No 1, the 19,000 gross ton Tonan Maru No 2, and the 19,000 gross ton Tonan Maru No 3. Ocean Fisheries, Ltd dispatched two factory ships, the 16,700 gross ton Nisshin Maru No 1 and the 17,500 gross ton Nisshin Maru No 2, to the Antarctic, while a third company, the present Polar Whaling, Ltd (Kyokuyo Hogei Kabushiki Kaisha), entered the industry with the 17,500 gross ton Kyokuyo Maru. No additional floating factories were constructed after 1939. Catcher strength grew from three vessels totalling 660 gross tons operating with Tonan Maru No 1 in the 1934-35 season to 51 catchers totalling 15,646 gross tons accompanying the six factory ships during the 1939-40 season. The number of personnel employed with the expeditions increased from 230 in 1934-35 to 3,561 in 1940-41 (Table 2).

With this growth in number of vessels and tonnage came a corresponding increase in the size of the yearly catch. During the 1934-35 season Tonan Maru No 1, operating from 20 December to 15 February, took 212 baleen whales 2/, or 168.1 blue whale units 3/, and one sperm whale. She produced 2,006 metric tons of whale oil and 28 metric tons of other products. In the 1940-41 season six Japanese fleets operating in the period 7 November to 16 March took 9,291 baleen whales, or 6,016.1 blue whale units, and 657 sperm whales, producing 97,690 metric tons of whale oil, 6,448 metric tons of sperm oil, and 15,987 metric tons of other products (Tables 3, 4).

Most of the products were exported, prior to 1940, although Japanese whalers did recover small quantities of meat and blubber for consumption in Japan. Whale oil was exported to European markets in the quantities shown in Table C, page 10.

The supply of sardine oil from Korea for Japanese consumption was reduced in 1940, and in order to make up the deficit all but 20,000 metric tons of that season's whale oil was retained for consumption in Japan.

Japanese pelagic operations in the Antarctic were confined largely to the waters south of the 55th parallel in the area extending from 85°E longitude eastward to 170°W longitude (Figures 1-6). In the 1935-36 season Tonan Maru No 1 operated south of latitude 60°S, between 80-150°E longitude. Between 1936 and 1939 only one Japanese factory ship, Nisshin Maru No 1, worked east of 140°E, and the greater part of the catch during that period was taken west of 130°E. In the 1940-41 season emphasis shifted eastward, and most of the catch was taken east of 140°E. During that season Tonan Maru No 2 and Nisshin Maru No 2 were the first Japanese ships to enter the Ross Sea.

2/ Baleen whales include blue, fin, humpback, and sei whales.
3/ One blue whale unit equals 1 blue, 2 fin, 2.5 humpback, or 6 sei whales.

TABLE C. - WHALE OIL EXPORTS, 1934-41		
Season	Oil (metric tons)	Market
1934-35	1,961	The Netherlands and Germany
1935-36	7,176	Great Britain
1936-37	25,776	Great Britain
1937-38	61,745	Great Britain
1938-39	67,113	Great Britain and Germany
1939-40	75,546	Germany
1940-41	20,000	Germany

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

Japanese whalers hunted all species of whales indigenous to the Antarctic (Figure 7). The catch was predominantly blue and fin, but a considerable number of humpback and sperm whales and a few sei were taken. During seven seasons of operation in Antarctic waters the Japanese fleets took a total of 13,941 blue, 13,008 fin, 3,892 humpback, 1,993 sperm, and 6 sei whales, a total of 32,840 whales, or 22,002.8 blue whale units. Products from these seven expeditions amounted to 408,659 metric tons, of which 356,500 were whale oil (Tables 3 and 4).

Japan was never a signatory to international whaling conventions, so her whalers were not bound by international whaling regulations. 4/ For example, Japanese law designated the period 1 November to 15 March as the Antarctic baleen whaling season (Table 5), whereas the season authorized by international regulations did not begin until December. Japanese law also established minimum length limits less stringent than those imposed by international regulations. 5/

The Japanese practice of catching during November, when whales generally are thin, combined with the catching of smaller whales, resulted in a lower yield of oil per blue whale unit than that achieved by European whalers (Table 1). The diversion of quantities of meat and blubber to be salted and frozen for human consumption, and an imperfect understanding of oil extraction processes contributed further to the low yield (Table 6).

From the infancy of Japanese pelagic whaling Norwegian influence was strong. Not only was the first Japanese factory ship purchased in Norway, but five catcher boats and a great amount of other equipment were procured there. Japanese whaling companies hired Norwegian gunners and technicians and chartered Norwegian tankers to carry whale oil to European ports. In preparing for its first pelagic expedition in 1936, Ocean Fisheries, Ltd purchased all harpoon guns, explosives, and harpoon lines from Norwegian firms, hired two Norwegian gunners, and chartered the Norwegian tanker Peik. Norwegian gunners were employed by Japanese whaling companies as late as 1939.

4/ Although the Japanese delegation signed the Final Act of the Convention which met in London in June 1938 to draft a Protocol amending the 1937 Agreement for the regulation of whaling, and although Japan, in the words of the Ministry of Foreign Affairs (Gaimusho), ".... proceeded to formally adhere to the 1937 year Agreement and the 1938 year Protocol, before the beginning of the 1939-40 season .....", Japan was never a party to any international whaling agreement; and after the outbreak of World War II, the Japanese Government formally notified the British Government of its intention to defer adhering to such agreements until the return of the world to normalcy.

5/ For more detailed comparison of Japanese and International regulations see section on "Regulation of Whaling Operations".

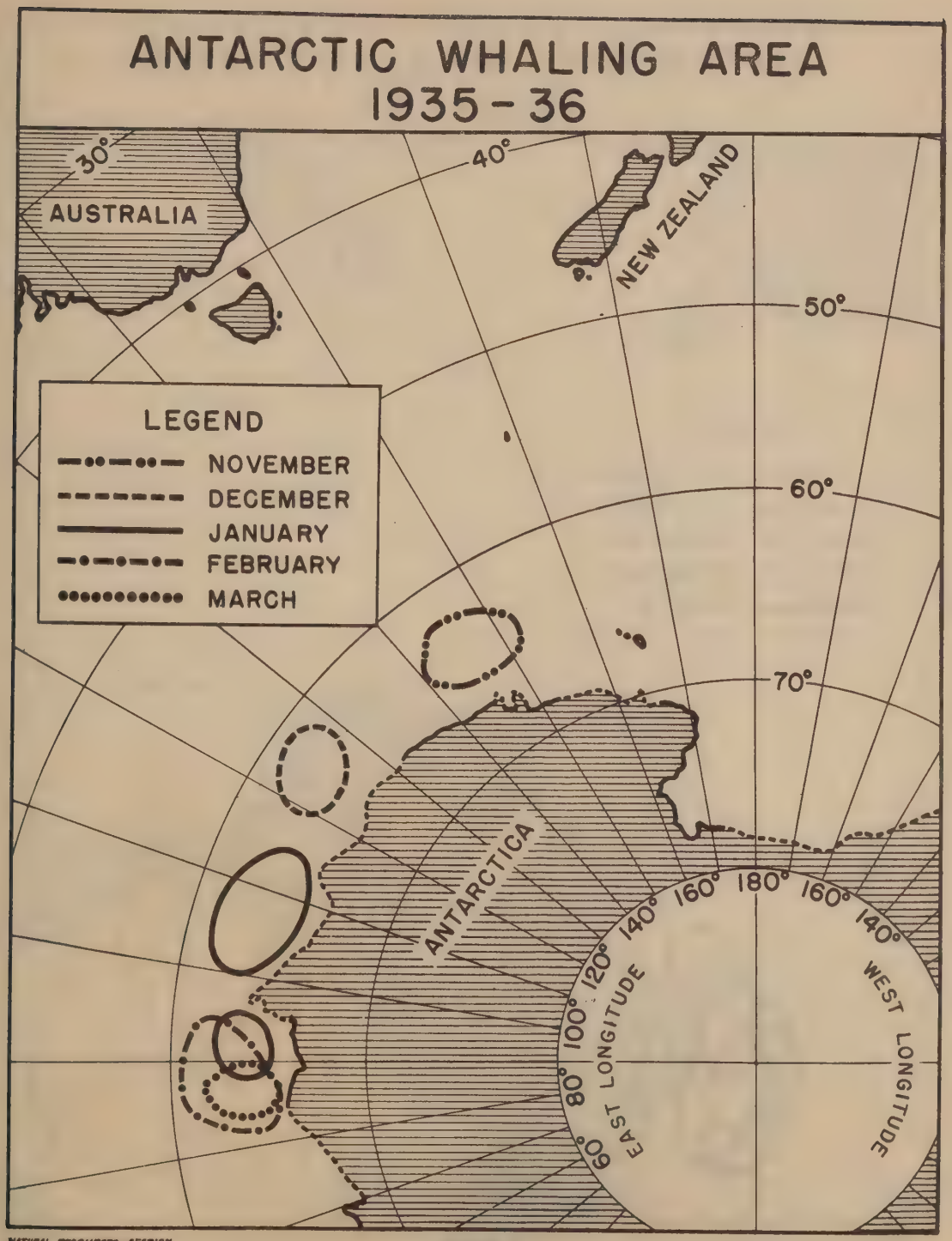
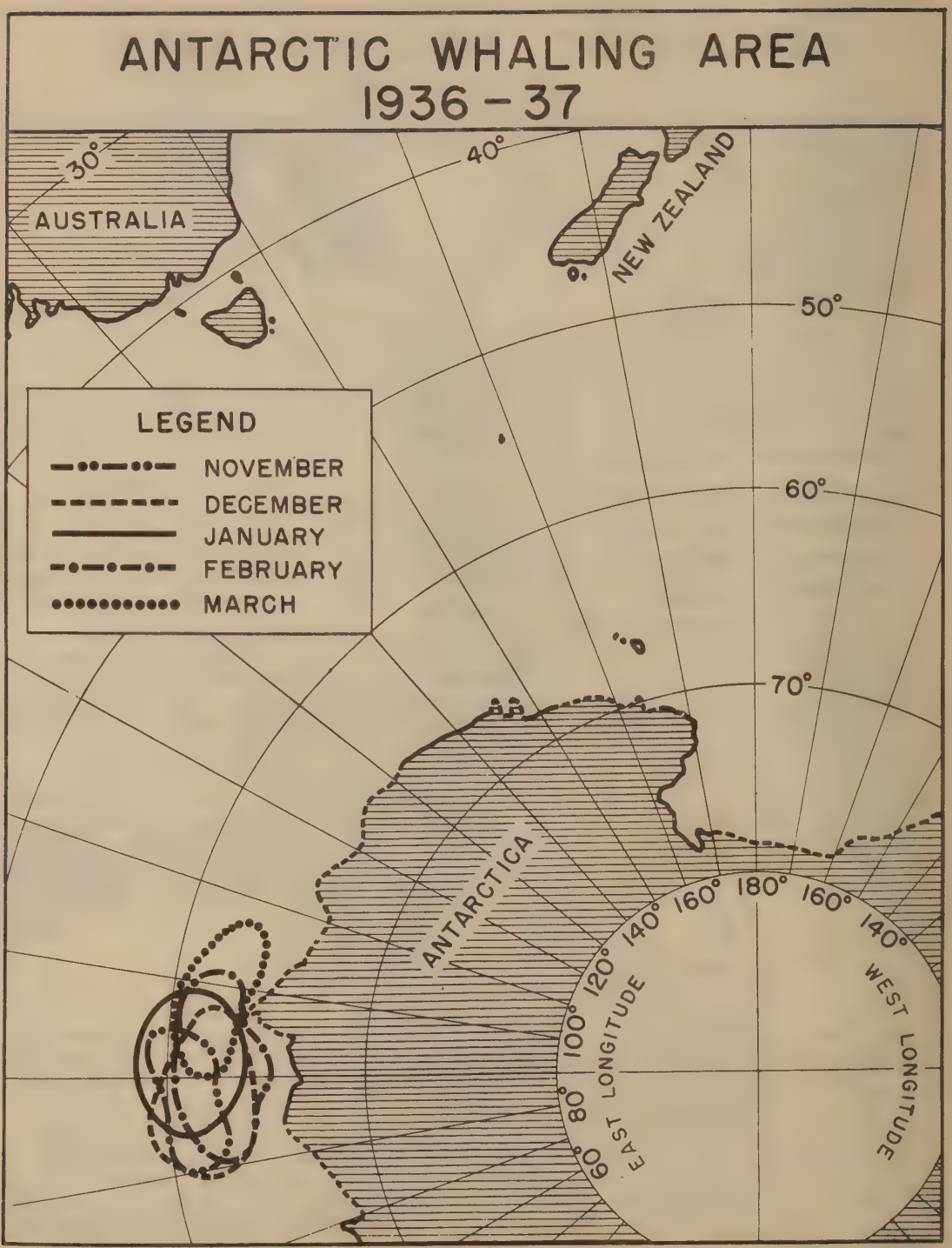

ANTARCTIC WHALING AREA
1935 - 36
30°
AUSTRALIA
40°
NEW ZEALAND
50°
60°
70°
LEGEND
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
ANTARCTICA
160°
180°
160°
140°
140°
120°
100°
80°
60°
EAST LONGITUDE
WEST LONGITUDE
NATURAL RESOURCES SECTION

Figure 1



NATURAL RESOURCES SECTION

Figure 2

ANTARCTIC WHALING AREA
1937 - 38
30°
AUSTRALIA
40°
NEW ZEALAND
50°
60°
70°
LEGEND
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
ANTARCTICA
180°
160°
140°
120°
100°
80°
60°
EAST LONGITUDE
WEST LONGITUDE
NATURAL RESOURCES SECTION

Figure 3

NATURAL RESOURCES SECTION

Figure 4

NATURAL RESOURCES SECTION

Figure 5

ANTARCTIC WHALING AREA
1940-41
30°
40°
50°
60°
70°
AUSTRALIA
NEW ZEALAND
LEGEND
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
ANTARCTICA
60°
80°
100°
120°
140°
160°
180°
160°
140°
EAST LONGITUDE
WEST LONGITUDE
NATURAL RESOURCES SECTION

Figure 6

Figure 7. - Flensing a blue whale

All Japanese floating factories (Table 7) except Tonan Maru No 1 were built in Japan, but they were little more than slightly modified copies of Norwegian ships, and their oil extracting equipment was of Norwegian design. When purchased in 1934, Tonan Maru No 1 was equipped with 28 press and 12 open boilers. This equipment was later modified, but the modifications as well as equipment installed on other Japanese factory ships were either purchased in Norway or copied from European designs.

With one exception the same was true of catcher boats (Table 8). The three ships which accompanied Tonan Maru No 1 in the 1934-35 season were purchased in Norway, and those built later in Japan were copies of Norwegian ships. In 1937, however, Ocean Fisheries, Ltd introduced diesel-powered catchers to the industry, and continued to use similarly powered vessels in all subsequent prewar expeditions. Nevertheless this company did purchase three catchers from Norwegian shipbuilders to replace vessels which had been lost in the ice during the winter of 1938-39.

Both the Japanese floating factories and the catchers were mobilized by the Japanese navy during World War II, and most of them were lost or severely damaged.

Japanese whalers did alter operating methods which they had learned from Norwegian whalers. Although catching technique remained much the same, dismembering and processing methods were modified to fit the physical and mental peculiarities of the Japanese laborer (Figure 8).

Instead of following European practice and processing all meat and blubber for oil, the Japanese salted or froze quantities of meat and blubber and shipped them to Japan for human consumption. Refrigerator ships and other carriers became increasingly important units of Japanese whaling fleets, growing in number from two during the 1937-38 season to 10 in the 1940-41 season.

Figure 8. - Dismembering deck of Japanese factory ship

The Norwegian administrative organization also was modified by the Japanese to meet their requirements. The administrative unit on a Japanese factory ship included both a captain and an expedition manager, rather than the captain-manager of Norwegian fleets. Catcher boats were commanded by a captain in addition to the gunner, in place of the Norwegian captain-gunner.

The organization of the ship's company of the factory ship Tonan Maru No 3 during the 1940-41 season is outlined in Table D as a typical example of factory ship personnel.

TABLE D. - SHIP'S COMPANY OF FACTORY SHIP TONAN MARU NO 3, 1940-41

Crew	
Position	Number
Captain	1
First mate	2
Second mate	2
Third mate	1
Chief engineer	1
First engineer	2
Second engineer	1
Third engineer	1
Wireless operator	4
Doctor	1
Medical assistant	1
Boatswain	1
Storekeeper	2
Carpenter	2
Quartermaster	4
Sailor	18
Sailor apprentice	2
Chief fireman	1
Fireman	18
Fireman apprentice	2
Oiler	11
Steward	1
Cook	10
Kitchen helper	6
Waiter	8
Total	103

Supervisory Personnel	
Position	Number
Business manager	1
Dismembering chief	1
Dismembering assistant	4
Factory chief	1
Factory assistant	2
Clerical chief	1
Clerk	2
Total	12

Technical Personnel	
Position	Number
Foreman	5
Chief flenser	1
Flenser	12
Lemmer	26
Winchman	24
Wireman	22
Bone-saw man	8
Laborer	30
Salting technician	11
Refrigeration technician	20
Factory technician	45
Carpenter	3
Smith	4
Electrician	1
Others	11
Total	223

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; Whaling Manual, Japan Whaling Industry Fisheries Association, 1943.

2. Northern Waters

As early as 1936 Japanese whalers became interested in the possibility of conducting whaling operations in the Bering Sea and Arctic Ocean. A Norwegian floating factory, Kommandoren, had operated in the area with five catchers during the summers of 1926 and 1927, and in 1933 a Russian factory ship, Aleut, began whaling in the Bering Sea and off Kamchatka. In 1936 the Japanese Government authorized Japanese factory ship operations in northern waters, but, fearing that extensive operations there would affect the catch from Japanese coastal whaling, the authorization was limited to a single factory ship. North Sea Whaling, Ltd (Hokuyo Hogei Kabushiki Kaisha) was established in that year by joint investment of Japan Marine Products, Ltd, Ocean Fisheries, Ltd, and Polar Whaling, Ltd, and in 1937 the new firm dispatched the diesel trawler Yuki Maru to study migration and population of whales in the North Pacific and Bering Sea.

Not until 1940 was a Japanese whaling expedition sent into the area. During that summer, after her return from the Antarctic, Tonan Maru No 1 operated off the northern Kuril Islands and Kamchatka, in the Bering Sea, and in the Arctic Ocean off the northeast coast of Siberia (Figure 9). Working with four catchers and five cargo boats from mid June to early September, the expedition caught 681 whales 6/. Products consisted of 4,607 metric tons of oil and 2,617 metric tons of other items, chiefly meat and blubber for human consumption.

During June, July, and August of the following year the same factory ship operated off Kamchatka and the northern Kuril Islands but did not enter the Arctic Ocean (Figure 10). Using eight catchers and three cargo boats, this expedition took 579 whales and produced 4,030 metric tons of oil and 3,612 metric tons of other products.

With the outbreak of World War II all pelagic whaling ceased. In 1943 North Sea Whaling was absorbed by Japan Marine Products.

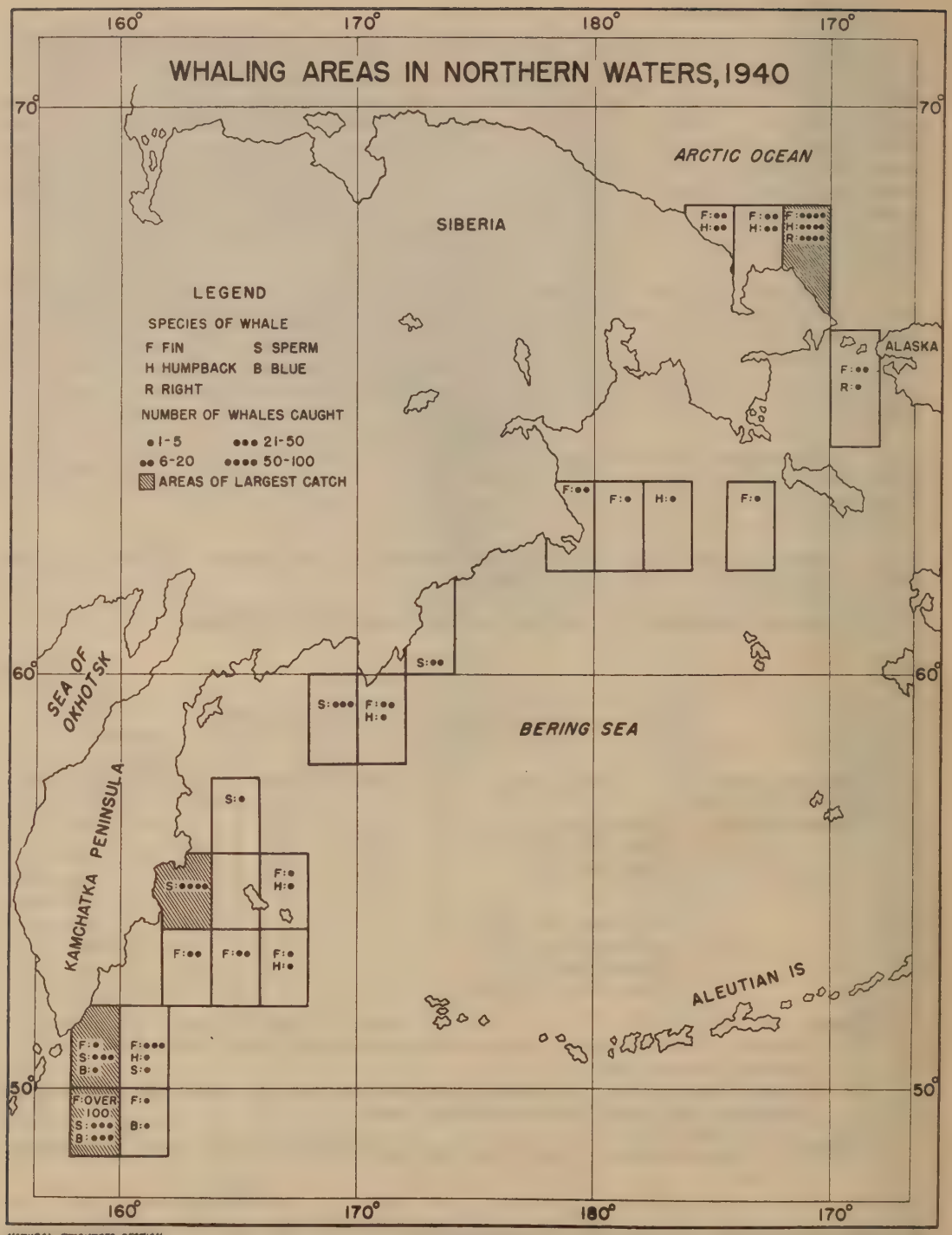
Whaling operations for the two years are summarized in Table E.

TABLE E. - WHALING OPERATIONS IN NORTHERN WATERS

Floating Factory	Catcher Boat	1940		1941	
		Crew	Catch	Crew	Catch
Tonan Maru No 1	Showa Maru No 7	19	175	20	94
	Showa Maru No 8	20	174	19	85
	Tama Maru No 3	20	130	19	50
	Tama Maru No 5	20	202	19	75
	Fumi Maru No 2 a/			19	132
	Kyo Maru No 1 a/			19	59
	Shonan Maru b/			ND	ND
	Showa Maru No 10 a/			19	84
TOTAL		79	681	134	579

a/ Operated only in 1941
b/ Although this catcher is listed in 1941 as starting, no catch data are recorded. Presumably the vessel did not actually hunt.
ND: No data available
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; North Sea Whaling, Ltd.

6/ Fisheries Agency records show the catch in 1940 as 681, but only 673 of those whales are accounted for by species. See Tables E and F.



NATURAL RESOURCES SECTION

Figure 9

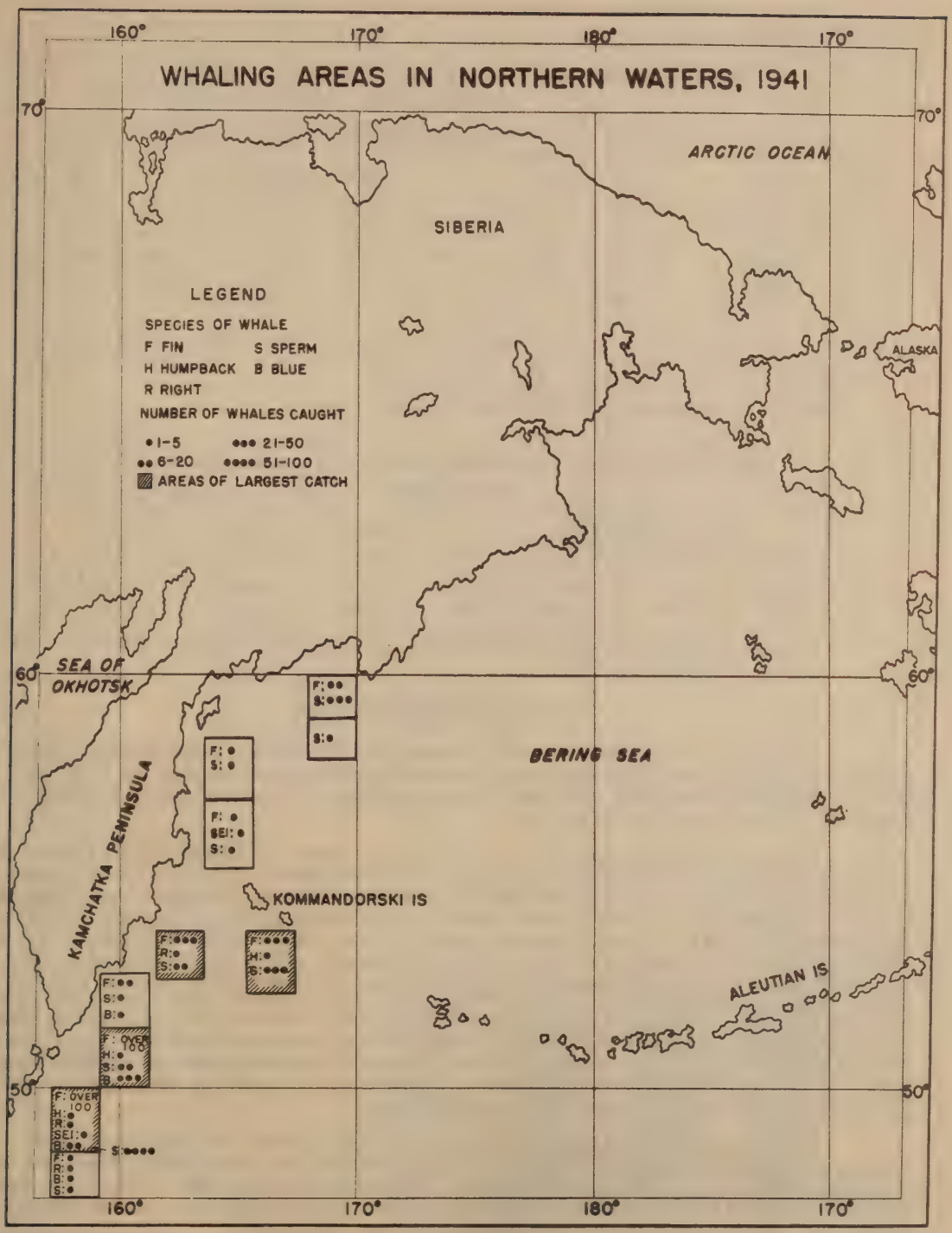

WHALING AREAS IN NORTHERN WATERS, 1941
160°
170°
180°
170°
70°
ARCTIC OCEAN
SIBERIA
LEGEND
SPECIES OF WHALE
F FIN
S SPERM
H HUMPBACK
B BLUE
R RIGHT
NUMBER OF WHALES CAUGHT
•1-5
••• 21-50
•• 6-20
•••• 51-100
AREAS OF LARGEST CATCH
ALASKA
60°
SEA OF OKHOTSK
BERING SEA
KAMCHATKA PENINSULA
KOMMANDORSKI IS
ALEUTIAN IS
50°
NATURAL RESOURCES SECTION

Figure 10

Catch is itemized by months and species in Table F, and products obtained are summarized in Table G.

TABLE F. - CATCH IN NORTHERN WATERS BY MONTHS AND SPECIES

Species of Whale	1940					1941			
	Jun	Jul	Aug	Sep	Total	Jun	Jul	Aug	Total
Blue	13	21	0	0	34	15	25	0	40
Fin	75	138	79	0	292	174	162	31	367
Humpback	1	1	105	1	108	1	4	1	6
Sei	0	2	0	1	3	1	1	5	7
Sperm	42	26	0	109	177	60	61	35	156
Gray	0	0	58	0	58	0	0	0	0
Right	0	0	1	0	1	2	1	0	3
TOTAL	131	188	243	111	673 a/	253	254	72	579

a/ Fisheries Agency lists total catch as 681.
SOURCE: Fisheries Agency; North Sea Whaling, Ltd.

TABLE G. - PRODUCTS OF JAPANESE WHALING IN NORTHERN WATERS (metric tons)

Year	Oil			Whale Meat	Other Products	Grand Total
	Whale	Sperm	Total			
1940	3,557	1,050	4,607	2,270	347	7,224
1941	3,088	942	4,030	3,178	434	7,642

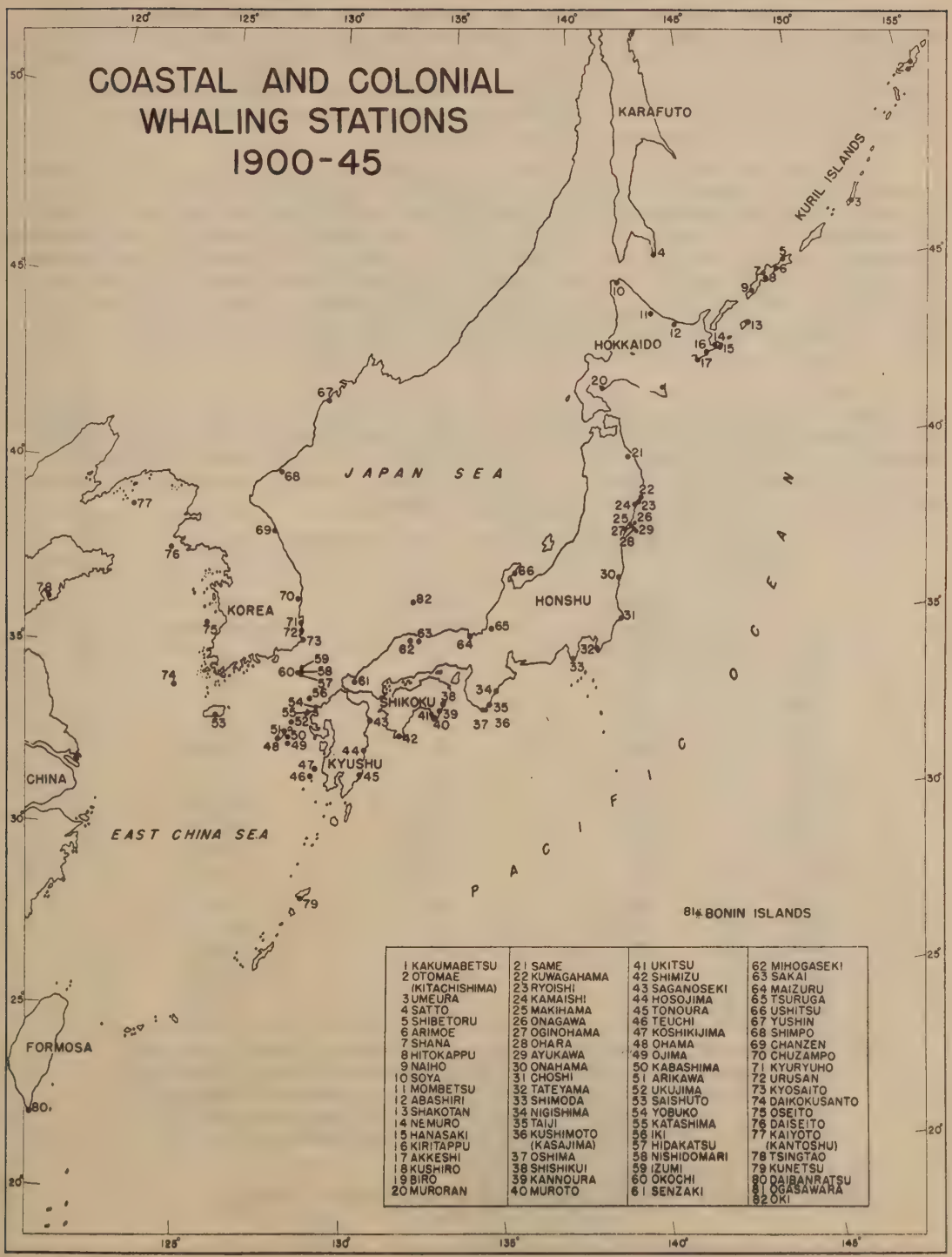
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; North Sea Whaling, Ltd.

COASTAL AND COLONIAL WHALING

Whaling operations conducted from coastal stations in Japan and several of its colonies (Figure 11) were less important, during the years immediately prior to World War II, than pelagic whaling. However, these operations did add materially to Japan's supply of protein foods and edible oils.

Japanese literature mentions the catching of whales along the coast as early as 230 BC, and references to whaling are frequent in later years. Not until 1660, however, did whaling become an organized industry. In that year Japanese fishermen began spearing whales on a large scale in the coastal waters of what are now Mie and Wakayama prefectures in southern Honshu. The industry spread rapidly to the islands of Shikoku and Kyushu, and about 1670 the use of nets for catching whales in coastal waters was introduced at Omura Bay in Kyushu. For the next hundred years this usage was common in Japan (see plate, "Primitive Whaling with Net and Spear"). By the end of the 19th century, however, the stock of whales in waters within a few miles of the coast had been so depleted that Japanese whalers were obliged to abandon nets and spears and devise methods for taking whales farther at sea. Experiments were conducted in the use of American whaling methods, specifically the whale boat and the hand-thrown harpoon, and in 1899 the Norwegian harpoon gun and the steam-powered catcher boat were adopted.

The modern era of whaling in Japan may be said to date from 1899 when Japan Pelagic Fishing, Ltd (Nippon Enyo Gyogyo Kabushiki Kaisha) was established at Senzaki in Yamaguchi Prefecture. A 122 gross ton steel catcher, Choshu Maru, the first of the type in Japan, was built and equipped with whaling gear of Norwegian design. Operating from a Korean land station, during her first season she took 15 whales.



NATURAL RESOURCES SECTION

Figure 11

During the first few years of the 20th century the industry grew rapdily. By 1903 a second company, Nagasaki Whaling, Ltd (Nagasaki Hogei Kabushiki Kaisha) was operating, and by 1907 the number of whaling companies had risen to 12. Operating from 22 land stations in Japan and Korea (Figure 12) with 38 catcher boats, in 1907 these companies took 1,086 whales, mostly blue and fin. The rate of exploitation of the coastal areas continued to rise, and 1,312 whales were taken in 1908. Throughout this period oil extracting equipment was primitive, consisting largely of open boilers. Products were chiefly meat and blubber intended for human consumption.

By 1909 the danger of destruction of the stock of whales in coastal waters became so grave that the Japanese Government enacted a law to regulate the industry and protect the stock. This law organized the companies into an association, required that licenses for catcher boats be obtained from the Ministry of Agriculture, Commerce, and Administration (Noshomusho), and limited the number of catcher licenses to 30. In addition the Minister was empowered to increase or decrease the number of licenses and in general to regulate the industry. However, the law did not specify minimum lengths of whales that might be taken, nor did it establish terms of utilization of whale carcasses. Additional legislation in 1934 and 1938 reduced the number of catcher licenses to 25 and imposed minimum length limits for various species of whales. 7/

Within the terms of the few early limitations the industry continued to grow. The number of companies fluctuated from as many as 12 in 1907 to as few as three in 1945, and the number of land stations increased from 22 in 1907 to 45, not all of which were operated in the years immediately prior to World War II. By 1945 three companies controlled the industry. Japan Marine Products, Ltd owned 19 of the authorized 25 licenses; Ocean Fisheries, Ltd, 5, and Polar Whaling, Ltd, 1 (Table H).

TABLE H. - OPERATION OF COASTAL WHALING VESSELS, 1930-45

Year	Licenses Issued a/	Number of Vessels Operating	Total Gross Tonnage
1930	30	ND	ND
1931	30	ND	ND
1932	30	ND	ND
1933	30	ND	ND
1934	35	21	2,690
1935	35	25	3,130
1936	35	25 b/	3,130
1937	35	31 b/	5,200
1938	35	35 b/	6,600
1939	35	35 b/	7,200
1940	35	35 b/	7,500
1941	35	35	8,220
1942	35	18	2,910
1943	35	21	3,620
1944	35	33	4,195
1945	38	30	4,380

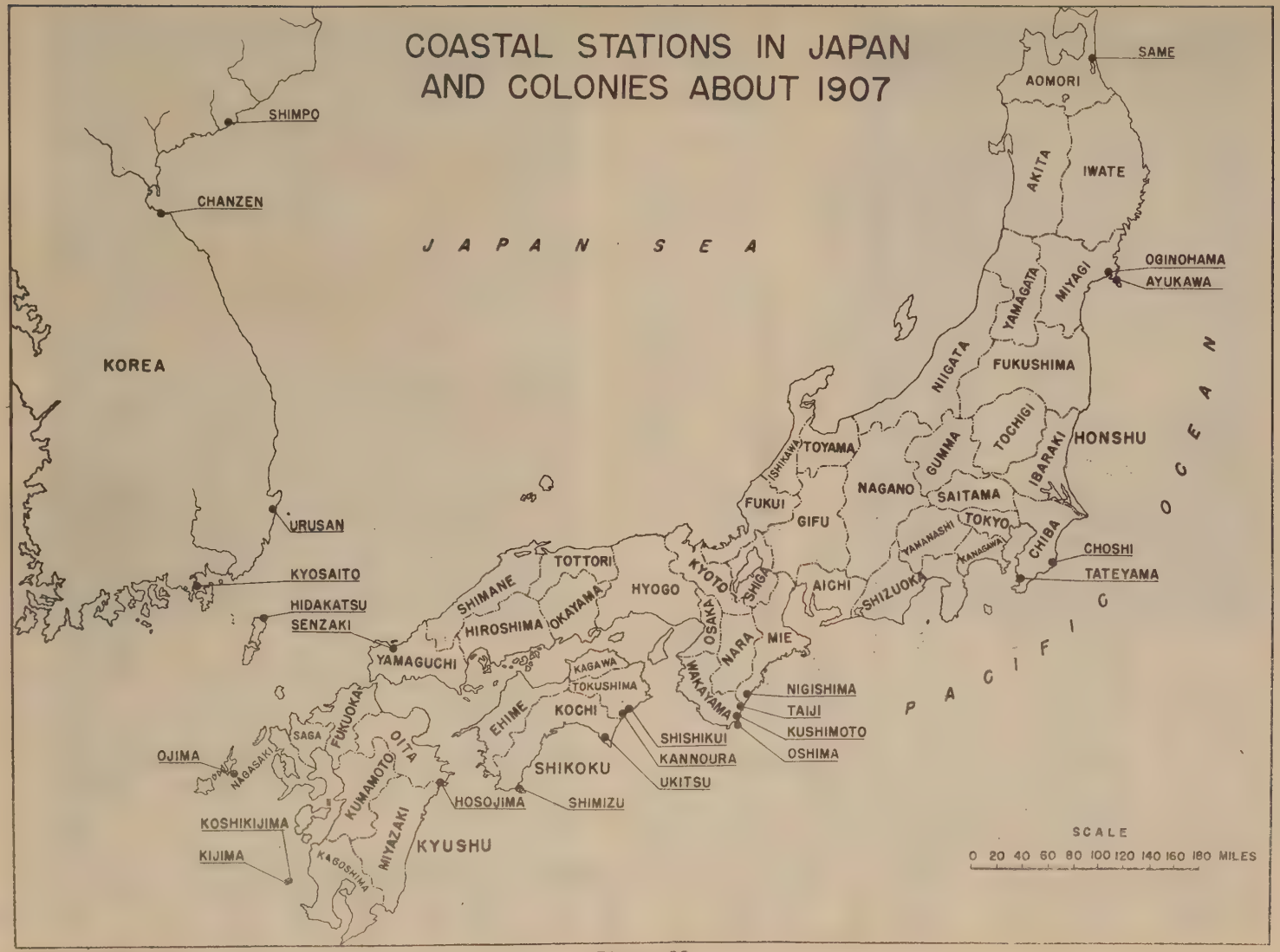
a/ The number of licenses issued was greater than the number permitted by ordinances of the Ministry of Agriculture and Forestry because of the practice of issuing temporary licenses to so-called training vessels. License holders in 1945 were as follows: Japan Marine Products, Ltd, 19; Ocean Fisheries, Ltd, 5; Polar Whaling, Ltd, 1.

b/ Estimate

ND: No data available

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

7/ See section on "Regulation of Whaling Operations".



NATURAL RESOURCES SECTION

Figure 12

During 1911-45 the annual catch in Japan and its colonies averaged 1,661 whales. Coastal stations in Japan accounted for an average of 1,406 whales yearly, or 84 percent of the total. The largest single catch in Japan and colonies was 2,349 whales in 1941, when catchers operating from Japanese coastal stations took 1,298 sperm, 621 sei, 232 fin, 34 humpback, 26 blue, and 2 right whales, a total of 2,213. Colonial stations accounted for 128 fin, 6 humpback, and 2 sei whales.

Throughout this 35-year period the catch in Japanese home waters consisted mainly of sei, sperm, and fin whales, with a small number of blue and humpback, and an occasional right or gray whale. Although large numbers of blue whales were taken prior to 1916, the stock disappeared so rapidly that after 1916 only a few were caught each year. The colonial catch, 16 percent of the annual average during this period, consisted largely of fin and humpback whales, although a considerable number of right and gray whales were taken between 1911 and 1930 (Table 9).

The annual catch of fin whales in Japanese home waters declined steadily from 1911-40. The average annual catch of 678 in 1911-15 dropped sharply to 369 for 1916-20 and continued to fall to a low of 109 for 1936-40. It rose to 199 during the war years (Figure 13).

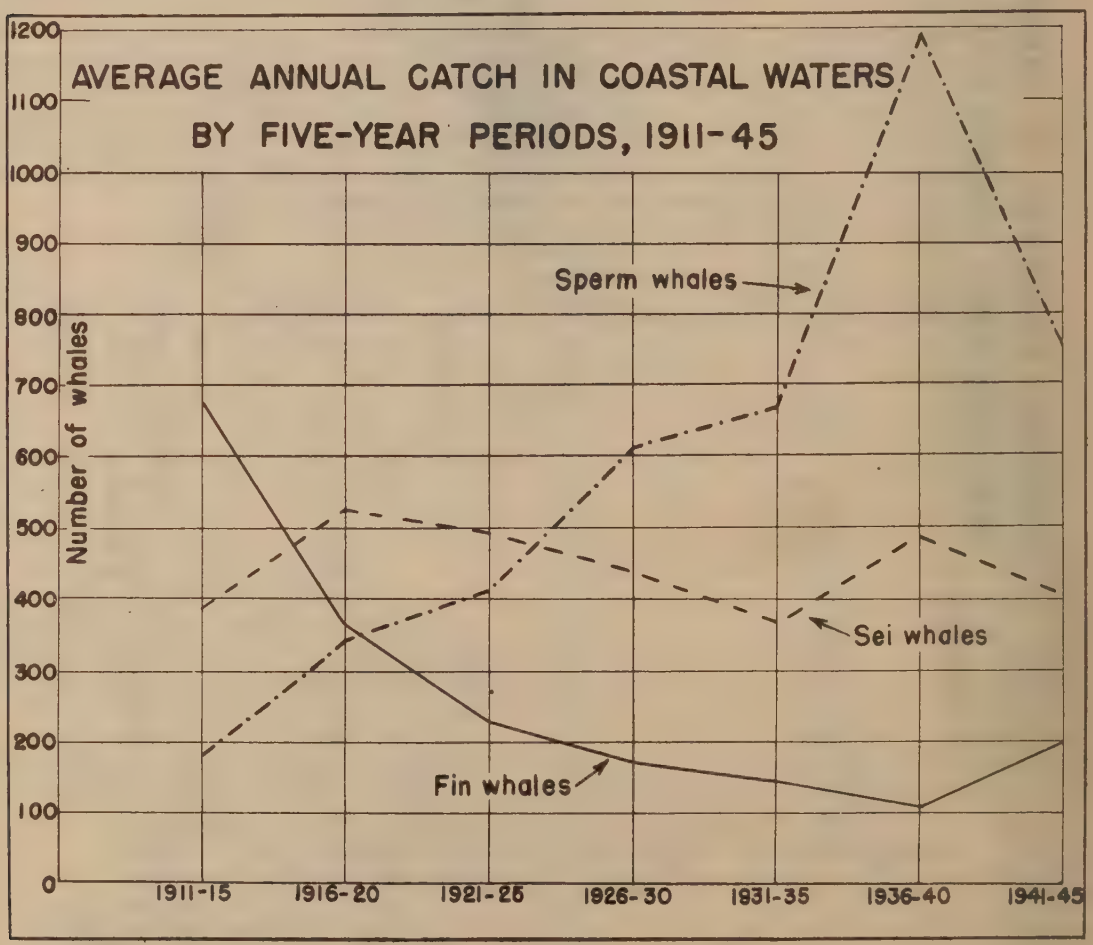


Figure 13

Figure 14. - Dismembering a sperm whale at a Japanese coastal station

The sei whale catch rose from an annual average of 386 during 1911-15 to a high of 525 in 1916-20 and then fell steadily during the next 15 years to an annual average of 368 for 1931-35. The average catch rose to 491 in 1936-40 but fell again to 406 during the next five years.

The annual average catch of sperm whales (Figure 14) increased greatly during the period. From 180 for 1911-15 it rose to 667 for 1931-35, increased sharply to 1,198 during 1936-40, but fell to 742 during 1941-45.

The rapid decline in the catch of fin whales and the gradual drop in the sei whale catch undoubtedly were due to depletion of the stock in coastal waters as a result of uncontrolled exploitation. Although the number of operating catchers was limited as early as 1909, length limits were not imposed until 1934 and even then were not sufficient to protect immature whales. Throughout the entire period under discussion a large number of immature blue, fin, and sperm whales were taken (Table 10). Frequently more than one-half the annual blue and fin catch consisted of immature whales. Intense exploitation during these years depleted inshore stocks, and catchers were forced to go farther and farther to sea.

Figure 15. - Typical catcher boat used in coastal waters

The sharp increase in the sperm whale catch beginning in 1935 was due to the introduction in coastal whaling of large, fast catcher boats designed primarily for use in the Antarctic (Figure 15).

Records of utilization of catch and types and amounts of products prior to 1932 are incomplete, but statistics for later years do exist. During 1932-45 average annual production amounted to 25,300 metric tons, or about 15 metric tons per whale (Table 11). The greater part of this total was whale meat, blubber, and fertilizers. Production in 1944 totaled 34,837 metric tons which consisted of 4,281 tons of whale and sperm oil, 28,577 tons of fresh, frozen, and

salted meat, and 1,979 tons of blubber, fertilizers, livers, baleen, and internal organs. Although oil extracting equipment was improved somewhat during this 14-year period, the important product continued to be protein foods. Whale oil amounted to only 1,070 of the 34,837 metric tons of products obtained from the 1944 catch. In addition to open boilers, pressure boilers were installed at most of the larger land stations, as were salting and refrigeration facilities to permit processing of meat and blubber for human consumption.

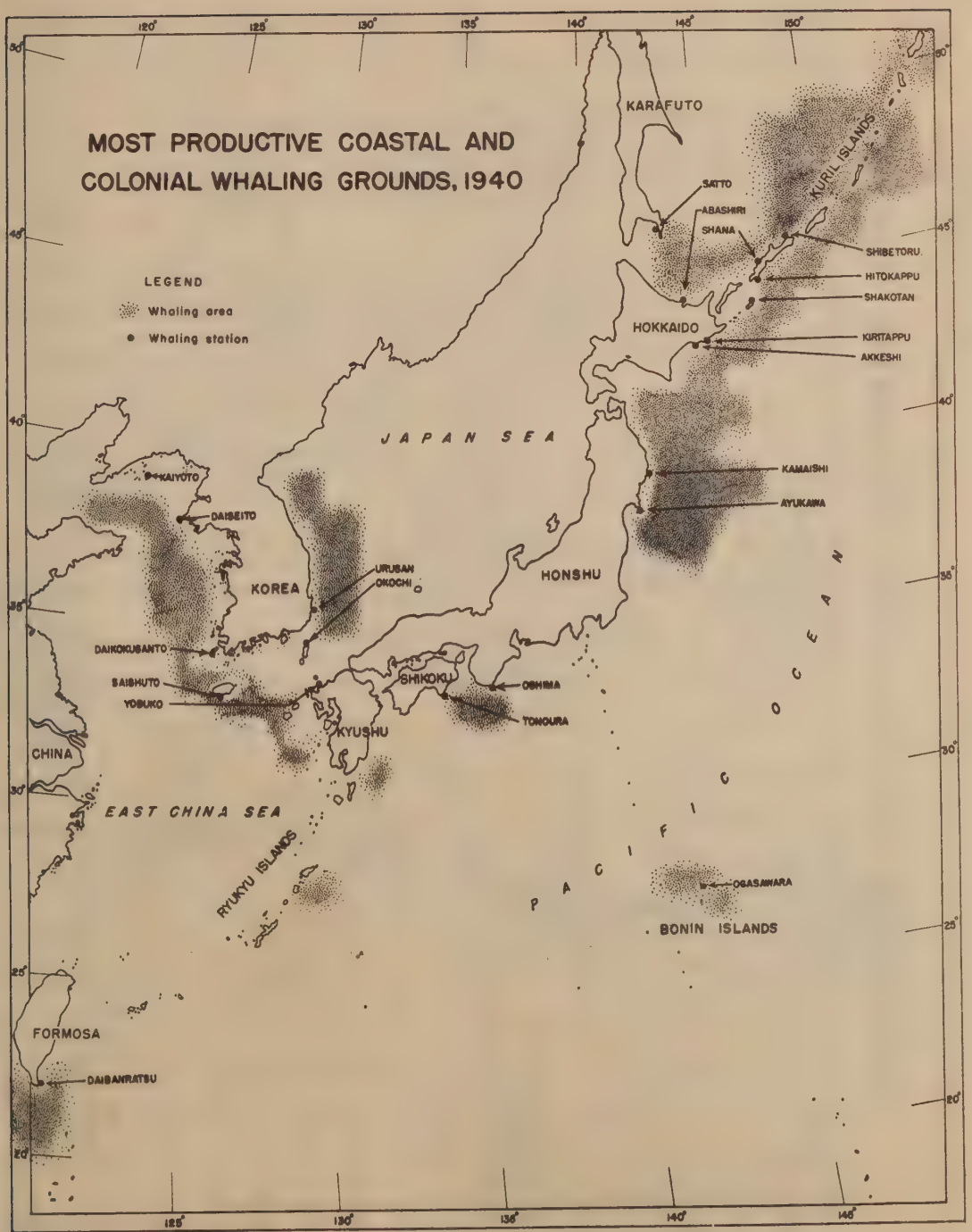
A ministerial ordinance promulgated in 1934 permitted coastal whaling (Figure 16) in any part of the area bounded by 20°N latitude on the south, 52°30'N latitude on the north, 118°E longitude on the west, and 159°E longitude on the east. The most productive areas have been along the Pacific coasts of northern Honshu and Hokkaido, in the Pacific off the Kuril Islands, along the west coast of Kyushu, and off the east and west coasts of Korea (Figure 17). Of lesser importance were areas adjacent to Formosa, the Bonin Islands, and Shikoku, and along the coast of southern Honshu. In recent years a few stations in northern Honshu, Hokkaido, and the Kurils accounted for the largest part of the catch. During the period 1935-40 the several land stations at Ayukawa in Miyagi Prefecture and the station at Snana on Etorofu-jima (Etorofu Island) in the Kurils took an average of 60 percent of the total coastal and colonial catch. The stations at Ayukawa alone took 40 percent of the catch (Tables 12-17).

Although a few land stations in Japan operated throughout the year, the best season was from June through October, varying slightly from station to station (Table 18, Figure 18). Bonin Island whaling was a winter operation lasting from December to April, while operations in all colonial waters except those off Korea and Tsingtao were conducted during the summer. The best season in Korean waters was from August to November, and the station at Tsingtao operated in February and March.

Norwegian influence was strong throughout the history of coastal whaling in Japan just as it was in pelagic whaling. Although Japan's first steel whaler, Choshu Maru, was built in Japan, she was modelled upon Norwegian ships, and her harpoon gun and whaling gear were of Norwegian design. From about 1900 until 1940 most of the catcher boats used in coastal operations were built in Norway (Table 19). As late as 1940, 18 of the 25 licensed catchers were Norwegian-built vessels. Japanese whaling companies also hired Norwegian gunners to train Japanese in whaling technique. In 1909 coastal whaling companies employed 17 Norwegians, and although the number decreased through later years, seven Norwegian gunners still were employed in Japan in 1930.

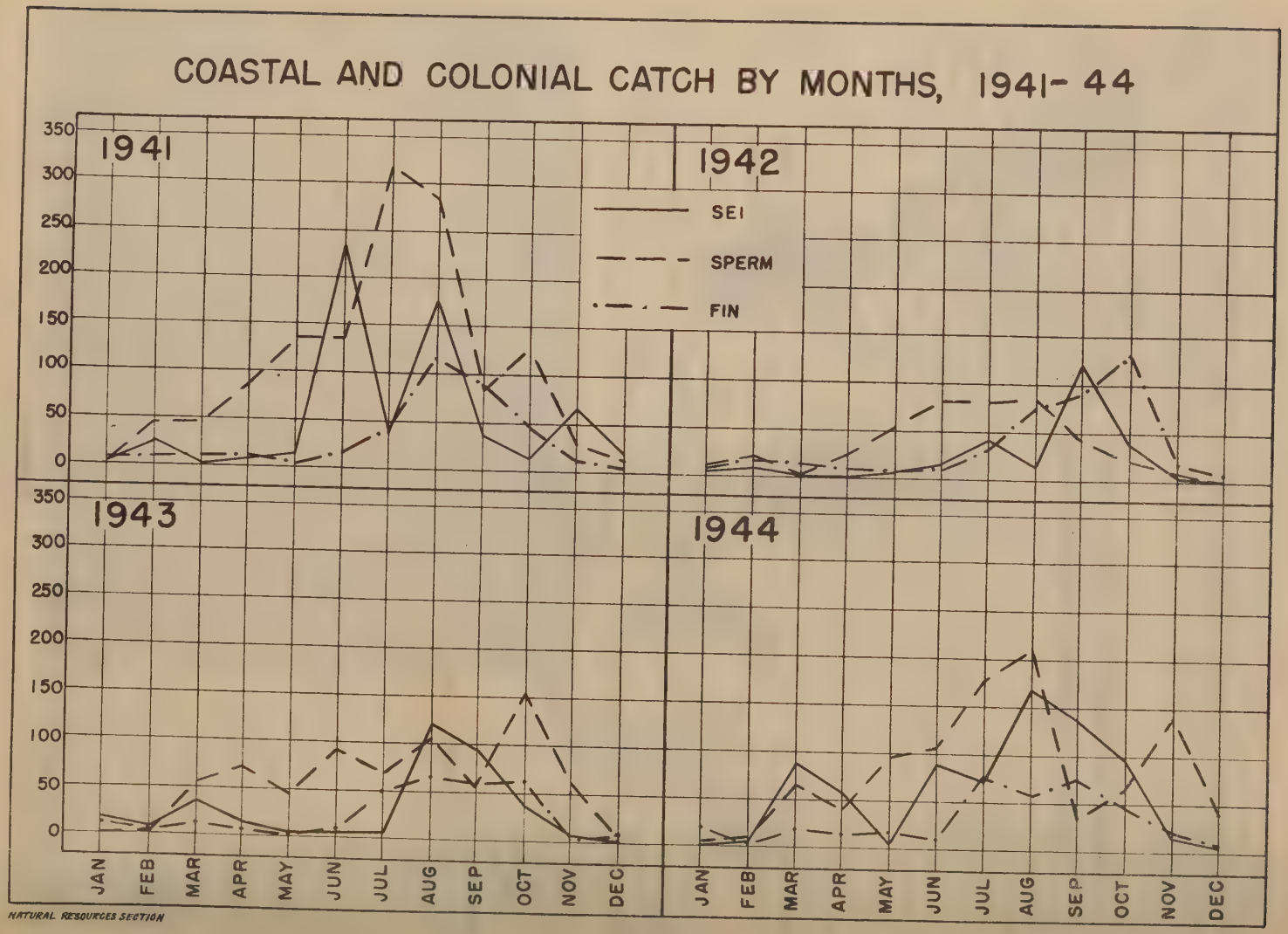
Figure 16. - Japanese coastal whaling land station

Processing equipment at Japanese coastal stations (Figure 16) was of the simplest type, consisting largely of open kettles for rendering oil from blubber, and pressure boilers for the similar processing of bone. Prior to World War II no Japanese coastal station was equipped with Kvaerner of Hartmann type boilers or centrifugal separators.



NATURAL RESOURCES SECTION

Figure 17


COASTAL AND COLONIAL CATCH BY MONTHS, 1941-44
1941
1942
1943
1944
SEI
SPERM
FIN
350
300
250
200
150
100
50
0
JAN
FEB
MAR
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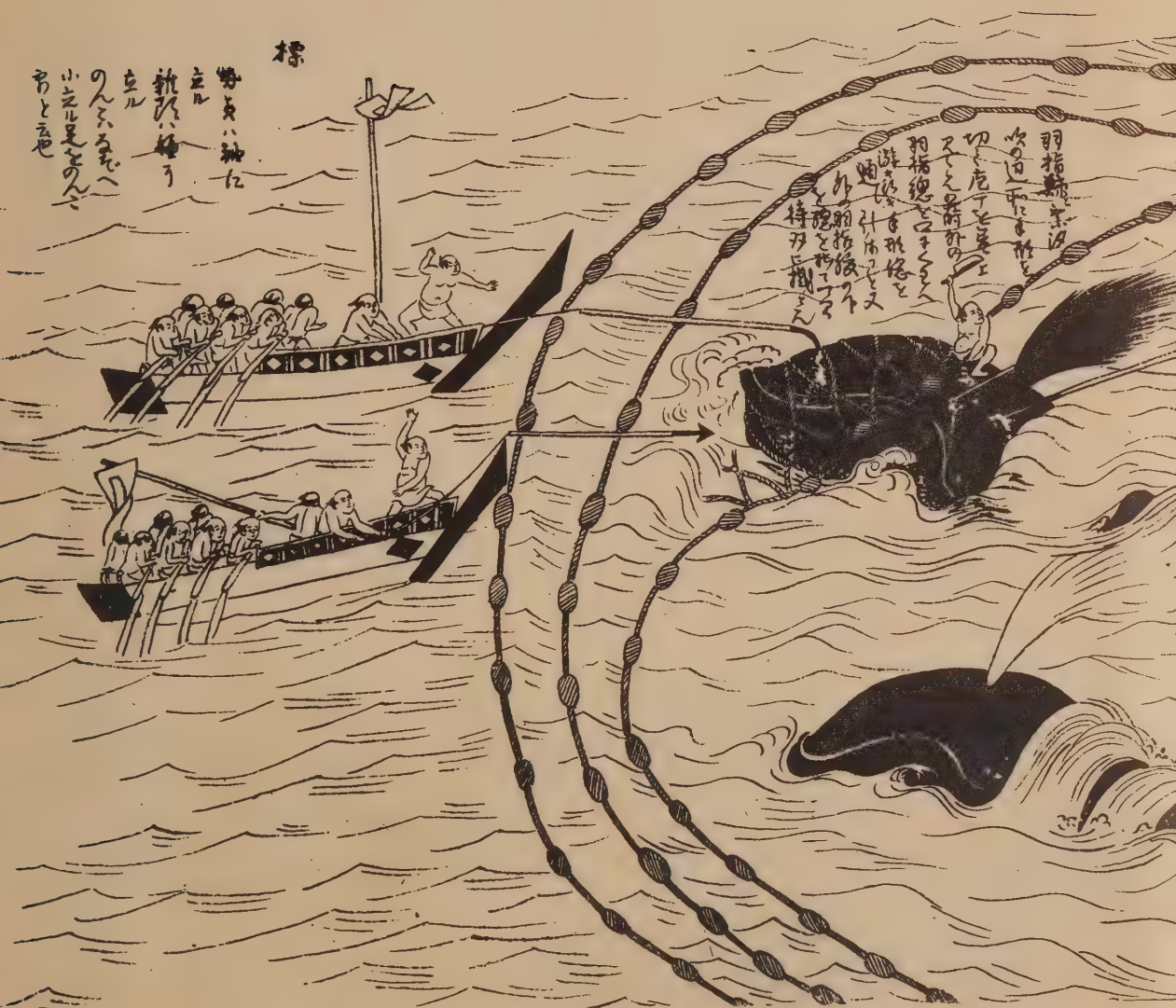
NATURAL RESOURCES SECTION

Figure 15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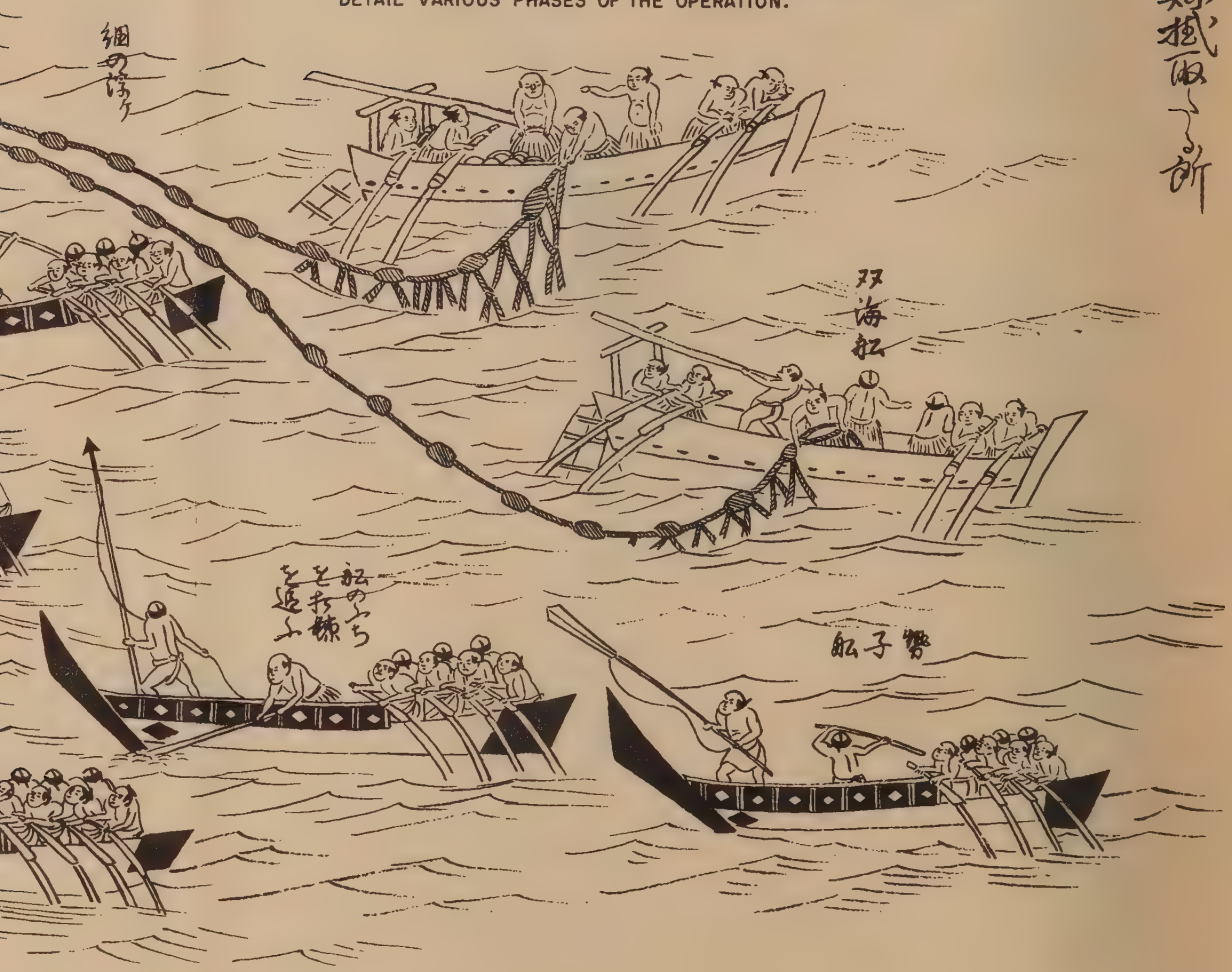
FROM A PICTURE SCROLL (MAKIMONO) BY KIZAKI YUZEN, 1772, SHOWING WHALING OPERATIONS NEAR OSAWA-SHIMA OFF THE WEST COAST OF KYUSHU. THE INSCRIPTIONS ON THE SCROLL EXPLAIN IN DETAIL VARIOUS PHASES OF THE OPERATION.



PLATE

ORGANIZATION AND REGULATION OF THE INDUSTRY

1. Major Whaling Companies

Although at one time as many as 12 companies were engaged in either pelagic or coastal whaling operations, in the years immediately prior to World War II three companies dominated the industry. The companies now known as Japan Marine Products, Ltd (Nippon Suisan KK), Ocean Fisheries, Ltd (Taiyo Gyogyo KK), and Polar Whaling, Ltd (Kyokuyo Hogei KK) owned all of the 25 coastal whaling catcher licenses and the six factory ships that participated in the pelagic whaling in the Antarctic. In 1940 these companies were capitalized at between ¥16,000,000 and ¥93,000,000, most of the stock being in the hands of a few persons close to the industry (Table I).

TABLE I. - JAPANESE WHALING COMPANIES, 1940

	Japan Marine Products, Ltd (Nippon Suisan KK)	Ocean Fisheries, Ltd (Taiyo Gyogyo KK) a/	Polar Whaling, Ltd (Kyokuyo Hogei KK)
Capital	¥93,000,000	¥16,000,000	¥20,000,000
Paid-up capital	¥68,250,000	¥16,000,000	¥15,000,000
Number of shares	1,960,000	320,000	400,000
Shareholders with more than 1,000 shares	120	1 b/	20
Antarctic Whaling c/			
Number of factory vessels	3	2	1
Number of whales caught	4,453	3,819	1,676
Coastal and Colonial Whaling			
Number of land stations	15	4	2
Number of catcher boats	21	11	8

a/ Present name. In 1940 name was Ocean Whaling, Ltd (Taiyo Hogei KK).
b/ One holding company, Hayashikane Shoten, owned 319,000 shares.
c/ 1940-41 season
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; and company records.

A fourth company, North Sea Whaling, Ltd (Hokuyo Hogei KK), in reality a joint subsidiary of the other three, operated in the Bering Sea, the Arctic Ocean, and the North Pacific Ocean. This company chartered a factory ship from Japan Marine Products, Ltd during 1940 and 1941.

During World War II Japan Marine Products, Ltd and Ocean Fisheries, Ltd were reorganized as control companies at the order of the Japanese Government. North Sea Whaling, Ltd was absorbed by Japan Marine Products, Ltd in 1943.

2. Regulation of Whaling Operations

With successive reorganizations of the Japanese Government, the whaling industry has been administered and regulated in turn by the Ministry of Agriculture, Commerce, and Administration (Noshomusho), the Ministry of Agriculture and Commerce (Noshosho), and the Ministry of Agriculture and Forestry (Norinsho).

The present Fisheries Agency (Suisancho) existed, as a bureau, in all of these ministries and has been directly responsible for the inspection, licensing, and regulation of the industry since the promulgation of the first code in 1909.

Japan never became a signatory to International Whaling Conventions and thus never has been bound by International Whaling Regulations. However, Japanese law did regulate the whaling industry. Basic provisions of the Factory Vessel Law of 1933 as amended in 1936 and 1938 include:

a. Prohibition of the taking of calves, suckling whales, and female whales accompanied by young.

b. Restrictions upon the size of whales that might be taken. (These restrictions permitted the taking of smaller whales than allowed by International Whaling Regulations.)

c. Limitation of the Antarctic season to the period 1 November-15 March.

d. Exclusion of factory ships from the area bordering Japan (118° to 159°E longitude, 20° to 52°N latitude).

e. Limitation of pelagic whaling in the North Pacific, Bering Sea, and Arctic Ocean to one factory vessel.

f. Requirement that whales be fully utilized and that catch be so regulated that all whales be treated within 36 hours after death.

The basic law regulating whaling in coastal waters about Japan and her colonies was promulgated in 1909 and amended in 1936. In addition to this law, certain regulations were established by ordinances of the Minister of Agriculture and Forestry in 1934. The salient features of the regulations in effect prior to 1946 were:

a. Permission to operate catcher boats and land stations was granted only by the Minister of Agriculture and Forestry.

b. Species and sizes of whales that might be taken were determined by the Minister of Agriculture and Forestry. Taking right and gray whales, and blue whales less than 65 feet in length was permitted.

c. The number of catcher boat licenses was limited to 25. (Special licenses were issued to so-called training vessels, and consequently the number of boats actually in operation was larger than 25.)

d. Whaling was limited to the area bounded by latitudes 20°00' and 52°00'N and longitudes 118°00' and 159°00'E.

These regulations did not apply to the taking of minke (Lesser Rorqual) and bottlenose whales, nor to porpoises and dolphins. The responsibility for the control of the catch of these species was delegated to prefectural authorities.

To enforce the factory vessel law, government inspectors accompanied all factory ships in the Antarctic and Arctic. Normally two inspectors accompanied each of the 16,000-19,000 gross ton floating factories, while one was considered sufficient on the smaller vessels. General practice was to select men who were graduates of a higher fisheries school and who had experience in coastal whaling. Many of the inspectors were chosen from among the employees of the Fisheries Agency. Appointments were normally for one year but often were renewed. During pre-surrender years no regular system existed for inspection of land stations in Japan and her colonies.

In 1946, in compliance with memoranda to the Japanese Government from the Supreme Commander for the Allied Powers, the law regulating factory vessels was amended so as to conform with the provisions of international whaling conventions, and a ministerial ordinance was promulgated to bring the control of the coastal industry within the provisions of the international regulations.

Japanese whaling regulations and International Whaling Regulations in effect in 1940 are compared in the Appendix.

APPENDIX

Subject	International Regulations	Japanese Regulations
Species, age, sex, and size limitations	"It is forbidden to take or kill Grey Whales and/or Right Whales." (Principal Agreement, 1937, Article 4) "It is forbidden to take or kill calves, or suckling whales or female whales which are accompanied by calves or suckling whales." (Principal Agreement, 1937, Article 6) "It is forbidden to take or kill any Blue, Fin, Humpback or Sperm whales below the following lengths, viz.:- (a) Blue whales 70 feet (b) Fin whales 55 feet (c) Humpback whales 35 feet (d) Sperm whales 35 feet (Principal Agreement, 1937, Article 5) "To Article 5 of the Principal Agreement there shall be added the following: 'except that blue whales of not less than 65 feet, fin whales of not less than 50 feet and sperm whales of not less than 30 feet in length may be taken for delivery to land stations provided that the meat of such whales is to be used for local consumption as human or animal food.'" (Protocol of 1938 amending Principal Agreement, Article 4)	"The floating factory whaling catcher is forbidden to take or kill right whales or grey whales except in the sea north of 20° North." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 41-2) "The floating factory whaling catcher is forbidden to take or kill the following whales: 1. Calves, suckling whales or female whales which are accompanied by calves or suckling whales. 2. Blue whales under 19.81 meters (65 feet) long. 3. Fin whales under 16.77 meters (55 feet) long. 4. Humpback whales under 10.67 meters (35 feet) long. 5. Sei whales under 10.67 meters (35 feet) long. 6. Sperm whales under 10.67 meters (35 feet) long. (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 41-3) "It is forbidden to catch (in waters off Japan and colonies): 1. Calves, suckling whales or female whales accompanied by calves or suckling whales. 2. Whales under the following lengths: Blue whales 18.18 meters (60 feet) Fin whales 15.15 meters (50 feet) Humpback whales 10.60 meters (35 feet) Sei whales 10.60 meters (35 feet) Sperm whales 9.09 meters (30 feet)" (Ministerial Ordinance, No. 200, Minister of Agriculture and Forestry, 1938)

Subject	International Regulations	Japanese Regulations
Area of Operation of Factory Vessels	"It is forbidden to use a factory ship or whale catcher attached thereto for the purpose of taking or treating baleen whales in any of the following areas, viz:- (a) in the waters north of 66° North Latitude; except that from 150° East Longitude eastwards as far as 140° West Longitude the taking or killing of whales by such ship or catcher shall be permitted between 66° North Latitude and 72° North Latitude; (b) in the Atlantic Ocean and its dependent waters north of 40° South Latitude; (c) in the Pacific Ocean and its dependent waters east of 150° West Longitude between 40° South Latitude and 35° North Latitude. (d) in the Pacific Ocean and its dependent waters west of 150° West Longitude between 40° South Latitude and 20° North Latitude. (e) in the Indian Ocean and its dependent waters north of 40° South Latitude." (Principal Agreement, 1937, Article 9 as amended by Protocol of 1938, Article 7).	"Only one whale floating factory is permitted to operate in the area north of 20° North in the North Pacific Ocean (including Bering Sea, Okhotsk Sea and the Arctic Ocean)." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 40) "Floating Factory whaling is prohibited in the area enclosed by the longitude lines, 118° East and 159° East, and the latitude lines, 20° North and 52°30' North." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 41)
	"(1) No factory ship which has been used for the purpose of treating baleen whales South of 40° South Latitude shall be used for that purpose elsewhere within a period of twelve months from the end of the open season prescribed in Article 7 of the Principal Agreement. (2) Only such factory ships as have operated during the year 1937 within the territorial waters of any signatory Government shall, after the signature of this Protocol, so operate, and any such ships so operating shall be treated as land stations and remain moored in territorial waters in one position during the season and shall operate for not more than six months in any period of twelve months, such period of six months to be continuous." (Protocol of 1938, Article 3)	No corresponding regulation.
	"Notwithstanding the provisions of Article 7 of the Principal Agreement, it is forbidden to use	No corresponding regulation.

Subject	International Regulations	Japanese Regulations
Area of Operation of Factory Vessels (Cont'd)	a factory ship or a whale catcher attached thereto for the purpose of taking or treating baleen whales in the waters south of 40° South Latitude from 70° West Longitude westwards as far as 160° West Longitude for a period of two years from the 8th day of December, 1938." (Protocol of 1938, Article 2)	
Antarctic Season	"It is forbidden to use a factory ship or a whale catcher attached thereto for the purpose of taking or treating baleen whales in any waters south of 40° South Latitude, except during the period from the 8th day of December to the 7th day of March following, both days inclusive, provided that in the whaling season 1937-38 the period shall extend to the 15th day of March, 1938, inclusive." (Principal Agreement, 1937, Article 7). "Notwithstanding the above prohibition of treatment during a close season the treatment of whales which have been taken during the open season may be completed after the end of the open season." (Protocol of 1938, Article 5)	"Floating factory whale catchers are forbidden to take baleen whales in the area south of 40° South from March 16th to October 31st." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940).
Season for Land Stations	"It is forbidden to use a land station or a whale catcher attached thereto for the purpose of taking or treating whales in any areas or in any waters for more than six months in any period of twelve months, such period of six months to be continuous. (Principal Agreement, 1937, Article 8) "In Article 8 of the Principal Agreement the word 'baleen' shall be inserted after the word 'treating'." (Protocol of 1938, Article 6)	No corresponding regulation. "In case the Minister of Agriculture and Forestry deems it necessary to do so, he may decide .....the whaling period....." (Regulation of "Coastal" Whaling of 1909 as amended 1934 and 1936, Article 9).
Utilization of the Catch	"The fullest possible use shall be made of all whales taken. Except in the case of whales or parts of whales intended for human food or for feeding animals, the oil shall be extracted by boiling or otherwise from all blubber, meat	"The fullest possible use shall be made of all whales taken. Oil shall be extracted by boiling or otherwise from all blubber, meat, bones and all parts of the body except the following: 1. the internal organs, baleen or fins.

Subject	International Regulations	Japanese Regulations
Utilization of the Catch (Cont'd)	(except the meat of sperm whales) and bones other than the internal organs, whales bone and flippers, of all whales delivered to the factory ship or land station."	2. whales or parts of whales intended for human food or live-stock. 3. the meat of sperm whales." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 42-2). No corresponding regulation for whaling off Japan and colonies.
Regulation of Catch	"The taking of whales for delivery to a factory ship shall be so regulated or restricted by the master or person in charge of the factory ship that no whale carcase shall remain in the sea for a longer period than 33 hours from the time of killing to the time when it is taken up on to the deck of the factory ship for treatment." (Protocol of 1938, Article 8)	"The superintendent of whaling or anyone who directs the business of a factory ship should take proper measure in order not to catch or kill a greater number of whales than can be delivered on board of the factory ship within a period of 36 hours from the time of the killing of each whale." (Floating Factory Regulation, 1933 as amended 1936, 1938 and 1940, Article 42-3) No corresponding regulation for whaling off Japan and colonies.
Payment of Crews	"Gunners and crews of factory ships, land stations and whale catchers shall be engaged on terms such that their remuneration shall depend to a considerable extent upon such factors as the species, size and yield of whales taken and not merely upon the number of whales taken, and no bonus or other remuneration, calculated by reference to the results of their work, shall be paid to the gunners and crews of whale catchers in respect of any whales the taking of which is forbidden by this Agreement. With a view to the enforcement of the preceding article, each contracting Government shall obtain, in respect of every whale catcher under its jurisdiction, an account showing the total emolument of each gunner and member of the crew and the manner in which the emolument of each of them is calculated." (Principal Agreement, 1937, Articles 13 and 14)	"Gunners and crews of factory ships or of whale catchers attached to them, shall be engaged on terms such that their remuneration should be decided considering the number, size, species, oil and yield of whales taken. No remuneration, calculated by reference to the result of their work, shall be paid to the gunners and crews of whale catchers in respect of any whales the taking of which is forbidden by this Regulation. Any person who operates factory whaling shall make a report showing in detail the payment of crew members." (Floating Factory Regulation, 1933 as amended 1936, 1938, 1940, Article 42-4) No corresponding regulation for whaling off Japan and colonies.

Subject	International Regulations	Japanese Regulations
Inspectors	"The contracting Governments will take appropriate measures to ensure the application of the provisions of the present Agreement and the punishment of infractions against the said provisions, and, in particular, will maintain at least one inspector of whaling on each factory ship under their jurisdiction. The inspectors shall be appointed and paid by Governments." (Principal Agreement, 1937, Article 1)	"It is forbidden that any person who operates factory whaling should deny governmental whaling inspectors to board factory ships or whale catchers. Any person who operates factory whaling must supply such inspectors with their board and room at cost." (Floating Factory Regulation, 1933 as amended in 1936, 1938 and 1940, Article 42-5) "The Minister of Agriculture and Forestry may at any time order.... investigation of whaling." (Regulation of "Coastal" Whaling of 1909 as amended 1934 and 1936, Article 13).
Records	"The contracting Governments shall, with regard to all whaling operations under their jurisdiction, communicate to the International Bureau for Whaling Statistics at Sandefjord in Norway the statistical information specified in Article 16 of the present Agreement together with any information which may be collected or obtained by them in regard to the calving grounds and migration routes of whales. In communicating this information the Government shall specify:- (a) the name and tonnage of each factory ship; (b) the number and aggregate tonnage of the whale catchers; (c) a list of the land stations which were in operation during the period concerned." (Principal Agreement, 1937, Article 17). "The contracting Governments shall obtain with regard to all factory ships and land stations under their jurisdiction records of the number of whales of each species treated at each factory ship or land station and as to the aggregate amounts of oil of each grade and quantities of meal, guano and other products derived from them, together with particulars with respect to each	"A whaling factory ship shall submit a business report for each vessel to the Minister of Agriculture and Forestry by December 31st." "If necessary the Minister of Agriculture and Forestry may require a business report at any time." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 15-1 and 15-2) "Any individual who has received permission to carry on whaling shall submit a business report to the Minister of Agriculture and Forestry within a month of the end of the fiscal year." (Regulation of "Coastal" Whaling of 1909 as amended 1934 and 1936, Article 13-1) "The Minister of Agriculture and Forestry may at any time order reports or other documents to be submitted." (Regulation of "Coastal" Whaling of 1909 as amended 1934 and 1936, Article 13).

Subject	International Regulations	Japanese Regulations
Records (Cont'd)	whale treated in the factory ship or land station as to the date and place of taking, the species and sex of the whale, its length and, if it contains a foetus, the length and sex, if ascertainable, of the foetus." (Principal Agreement, 1937, Article 16).	
Definitions	"In the present Agreement the following expressions have the meanings respectively assigned to them, that is to say:- 'factory ship' means a ship in which or on which whales are treated whether wholly or in part; 'whale catcher' means a ship used for the purpose of hunting, taking, towing, holding on to, or scouting for whales; 'land station' means a factory on the land, or in the territorial waters adjacent thereto, in which or at which whales are treated whether wholly or in part; 'baleen whale' means any whale other than a toothed whale; 'blue whale' means any whale known by the name of blue whale, Sibbald's rorqual or sulphur bottom; 'fin whale' means any whale known by the name of common finback, common finner, common rorqual, finback, fin whale, herring whale, razorback, or true fin whale; 'grey whale' means any whale known by the name of grey whale, California grey, devil fish, hard head, mussel digger, grey back, rip sack; 'humpback whale' means any whale known by the name of bunch, humpback, humpback whale, humpbacked whale, hump whale or hunchbacked whale; 'right whale' means any whale known by the name of Atlantic right whale, Arctic right whale, biscayan right whale, bowhead, great polar whale, Greenland right whale, Greenland whale, Nordkaper, North Atlantic right whale, North Cape whale, Pacific right whale, pigmy right whale, Southern pigmy right whale, or Southern right whale;	No definitions of these terms.

Subject	International Regulations	Japanese Regulations
Definitions (Cont'd)	'sperm whale' means any whale known by the name of sperm whale, spermacet whale, cachalot or pot whale; 'length' in relation to any whale means the distance measured on the level in a straight line between the tip of the upper jaw and the notch between the flukes of the tail." (Principal Agreement, 1937, Article 18)	"Length in relation to any whale of the preceeding paragraph from No. 1 to No. 6 (see Article 41-3) means the distance measured on the level in a straight line between the tip of the upper jaw and the notch between the flukes of the tail." (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Article 41-3)
Penalties	"Prosecutions for infraction against or contraventions of the present Agreement and the regulations made thereunder shall be instituted by the Government or a Department of the Government." (Principal Agreement, 1937, Article 3)	The Japanese laws provided penalties: a fine of ¥100 or less or penal servitude for 3 months or less for violation of whaling regulations. (Floating Factory Regulation of 1933 as amended 1936, 1938 and 1940, Articles 46, 48-1 and 48-2 and Regulation of "Coastal" Whaling of 1909 as amended 1934 and 1936, Articles 14 and 15).

TABLE 1.-TOTAL CATCH IN PELAGIC WHALING IN THE ANTARCTIC, 1934-35 to 1940-41 a/

Season	Blue	Fin	Humpback	Sei	Sperm	Others	Total Whales	Total Oil Production (metric tons) b/	Oil Production per Blue Whale Unit (metric tons)
1934-35	15,944	11,664	1,928	141	556	0	30,233	397,232	17.3
1935-36	16,510	9,177	3,121	2	396	0	29,206	388,307	17.2
1936-37	14,183	13,302	4,460	19	856	1 c/	32,821	436,284	18.9
1937-38	14,826	26,457	2,039	6	824	0	44,152	550,344	18.8
1938-39	13,849	19,477	883	3	2,468	1 c/	36,681	458,771	18.1
1939-40	11,392	17,757	2	1	1,853	704 d/	31,709	419,857	19.8
1940-41	4,936	7,084	2,675	22	778	0	15,495	178,733	17.9

a/ Includes the Japanese catch.
b/ Converted from barrels in the source data
c/ Right whale
d/ Consists of 703 "baleen whales", no specification given, and one right whale.
SOURCE: International Whaling Statistics, Publication xviii, edited by the Committee For Whaling Statistics, Oslo 1945.

TABLE 2.-COMPOSITION OF JAPANESE ANTARCTIC WHALING FLEETS, 1934-41

Season	Floating Factories			Catchers			Carriers	
	Number	Gross Tons	Total Crews	Number	Gross Tons	Total Crews	Number	Total Crews
1934-35	1	9,866	173	3	660	57	0	NA
1935-36	1	9,866	ND	5	1,061	95	0	NA
1936-37	2	26,631	545	13	3,385	257	0	NA
1937-38	4	63,443	1,237	31	9,267	609	2	222
1938-39	6	100,202	1,853	49	15,069	941	5	ND
1939-40	6	100,202	1,966	51	15,646	974	9	490
1940-41	6	100,202	2,076	45	14,556	896	10	589

NA: Not applicable
ND: No data available
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE 3.-JAPANESE WHALE CATCH IN THE ANTARCTIC, 1934-41

Season and Floating Factory	Whales						Blue Whale Units a/
	Blue	Fin	Humpback	Sei	Sperm	Total	
1934-35							
Tonan Maru No 1	125	83	4	0	1	213	168.1
1935-36							
Tonan Maru No 1	456	174	9	0	0	639	546.6
1936-37							
Tonan Maru No 1	589	166	94	0	0	849	
Nisshin Maru No 1	807	279	30	0	0	1,116	
Total	1,396	445	124	0	0	1,965	1,668.1
1937-38							
Tonan Maru No 1	399	361	89	0	1	850	
Tonan Maru No 2	637	1,048	148	0	0	1,833	
Nisshin Maru No 1	640	766	177	0	0	1,586	
Nisshin Maru No 2	718	538	59	0	0	1,295	
Total	2,394	2,693	473	0	1	5,564	3,931.2
1938-39							
Tonan Maru No 1	266	196	102	0	36	600	
Tonan Maru No 2	413	655	91	0	118	1,277	
Tonan Maru No 3	416	698	131	0	133	1,378	
Nisshin Maru No 1	503	933	147	0	134	1,717	
Nisshin Maru No 2	597	510	162	0	159	1,428	
Kyokuyo Maru	471	352	250	0	67	1,140	
Total	2,666	3,344	883	0	647	7,540	4,691.2
1939-40							
Tonan Maru No 1	365	188	0	0	204	757	
Tonan Maru No 2	527	537	0	0	103	1,167	
Tonan Maru No 3	728	555	0	0	177	1,460	
Nisshin Maru No 1	839	384	0	0	60	1,283	
Nisshin Maru No 2	744	406	0	0	65	1,215	
Kyokuyo Maru	476	535	0	0	78	1,089	
Total	3,679	2,605	0	0	687	6,871	4,981.5
1940-41							
Tonan Maru No 1	259	419	85	5	51	819	
Tonan Maru No 2	770	435	239	0	119	1,563	
Tonan Maru No 3	504	785	588	0	194	2,071	
Nisshin Maru No 1	589	831	584	1	103	2,108	
Nisshin Maru No 2	572	624	380	0	135	1,711	
Kyokuyo Maru	531	567	523	0	55	1,676	
Total	3,225	3,661	2,399	6	657	9,948	6,016.1

a/ One blue whale unit equals 1 blue whale, 2 fin whales, 2.5 humpback whales, or 6 sei whales.
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry. Data for 1934-35 through 1937-38 from Whaling Manual (Hogei Binran), Japan Whaling Industry Fisheries Assn (Nippon Hogeigyo Suisan Kumiai), 1939. Data for 1938-39 through 1940-41 from official reports by Japanese Government whaling inspectors.

TABLE 4.-PRODUCTS OF JAPANESE ANTARCTIC WHALING, 1934-41
(metric tons)

Season and Floating Factory	Oil			Food Products				Other Products							Grand Total
	Whale	Sperm	Total	Meat	Flukes	Ventral Grooves	Total	Liver	Bone Meal	Baleen	Leather Material	Gelatine Material	Miscellaneous	Total	
1934-35															
Tonan Maru No 1	2,006	0	2,006	0.0	27.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	2,033.7
1935-36															
Tonan Maru No 1	7,358	0	7,358	0.0	149.0	57.0	206.0	0.0	0.0	19.0	0.0	0.0	5.8	24.8	7,588.8
1936-37															
Tonan Maru No 1	10,809	0	10,809	0.0	84.8	27.0	111.8	0.0	0.0	8.2	0.0	0.0	13.0	21.2	
Nisshin Maru No 1	15,280	0	15,280	56.2	125.3	0.0	181.5	0.0	0.0	5.5	0.0	0.0	0.0	5.5	
Total	26,089	0	26,089	56.2	210.1	27.0	293.3	0.0	0.0	13.7	0.0	0.0	13.0	26.7	26,409.0
1937-38															
Tonan Maru No 1	10,025	12	10,037	0.0	119.7	25.0	144.7	0.0	0.0	5.8	0.0	0.0	0.0	5.8	
Tonan Maru No 2	20,085	0	20,085	85.7	263.5	0.0	349.2	0.0	0.0	16.8	0.0	0.0	0.0	16.8	
Nisshin Maru No 1	18,540	0	18,540	166.8	124.5	76.0	367.3	0.0	0.0	50.7	0.0	0.0	3.7	54.4	
Nisshin Maru No 2	16,118	0	16,118	166.7	99.2	84.8	350.7	0.0	106.3	23.8	0.0	0.0	4.7	134.8	
Total	64,768	12	64,780	419.2	606.9	185.8	1,211.9	0.0	106.3	97.1	0.0	0.0	8.4	211.8	66,203.7
1938-39															
Tonan Maru No 1	6,142	373	6,515	39.1	103.3	76.4	218.8	4.1	0.0	12.4	32.2	0.0	25.9	74.6	
Tonan Maru No 2	12,132	1,043	13,175	227.7	91.1	56.4	375.2	2.3	0.0	11.6	130.0	3.0	9.8	156.7	
Tonan Maru No 3	13,560	1,136	14,696	630.7	143.8	39.2	813.7	0.0	0.0	22.8	121.0	5.2	0.8	149.8	
Nisshin Maru No 1	16,490	1,270	17,760	469.5	170.9	135.6	776.0	26.2	0.0	50.2	289.3	10.3	7.3	383.8	
Nisshin Maru No 2	14,117	1,596	15,713	53.4	288.1	106.2	447.7	59.1	552.8	17.7	102.7	4.6	4.0	740.9	
Kyokuyo Maru	12,208	562	12,770	22.7	101.2	75.5	199.4	0.0	0.0	11.8	163.9	0.0	0.9	176.6	
Total	74,649	5,980	80,629	1,443.1	898.4	489.3	2,830.8	91.7	552.8	126.5	839.1	23.1	48.7	1,681.9	85,141.7
1939-40															
Tonan Maru No 1	7,845	1,650	9,495	6.8	150.2	60.9	217.9	0.0	0.0	6.8	115.5	78.8	36.7	237.8	
Tonan Maru No 2	13,571	859	14,430	4,518.0	238.0	167.9	4,923.9	167.6	0.0	25.2	162.3	112.8	205.9	673.8	
Tonan Maru No 3	17,410	1,728	19,138	16.6	298.3	39.3	354.2	5.0	0.0	8.1	300.8	174.5	68.1	556.5	
Nisshin Maru No 1	16,887	543	17,430	855.4	199.4	227.3	1,282.1	0.0	0.0	52.8	110.8	23.2	1.5	188.3	
Nisshin Maru No 2	15,458	712	16,170	163.3	266.8	199.3	629.4	5.4	10.3	36.4	198.5	48.8	121.8	421.2	
Kyokuyo Maru	12,769	735	13,504	646.2	216.5	111.7	974.4	141.9	0.0	8.9	184.4	142.5	53.6	531.3	
Total	83,940	6,227	90,167	6,206.3	1,369.2	806.4	8,381.9	319.9	10.3	138.2	1,072.3	580.6	487.6	2,608.9	101,157.8
1940-41															
Tonan Maru No 1	8,005	539	8,544	0.0	450.5	0.0	450.5	0.0	0.0	0.0	64.9	66.9	42.8	174.6	
Tonan Maru No 2	19,466	1,102	20,568	2,201.7	1,286.4	0.0	3,488.1	0.0	0.0	0.0	381.2	195.3	56.9	633.4	
Tonan Maru No 3	18,199	1,932	20,131	3,500.6	1,144.6	0.0	4,645.2	0.0	0.0	0.0	423.6	171.6	26.8	622.0	
Nisshin Maru No 1	18,767	957	19,724	1,474.3	363.0	0.0	1,837.3	0.0	0.0	0.0	158.4	21.5	57.1	237.0	
Nisshin Maru No 2	17,018	1,459	18,477	965.1	616.0	0.0	1,581.1	0.0	0.0	0.0	60.8	49.3	184.8	294.9	
Kyokuyo Maru	16,235	459	16,694	979.4	554.4	0.0	1,533.8	0.0	0.0	0.0	319.8	61.0	108.0	488.8	
Total	97,690	6,448	104,138	9,121.1	4,414.9	0.0	13,536.0	0.0	0.0	0.0	1,408.7	565.6	476.4	2,450.7	120,124.7

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry, from data submitted by the whaling companies, except last three seasons, for which all figures are based on the reports submitted by Japanese Government whaling inspectors.

TABLE 5.-JAPANESE ANTARCTIC WHALING SEASONS a/

Season	Floating Factory	Opening Date	Closing Date
1934-35	Tonan Maru No 1	20 Dec	15 Feb
1935-36	Tonan Maru No 1	5 Nov	5 Mar
1936-37	Tonan Maru No 1	3 Nov	10 Mar
	Nisshin Maru No 1	13 Nov	16 Mar
1937-38	Tonan Maru No 1	3 Nov	6 Mar
	Tonan Maru No 2	1 Nov	17 Mar
	Nisshin Maru No 1	10 Nov	15 Mar
	Nisshin Maru No 2	24 Nov	17 Mar
1938-39	Tonan Maru No 1	7 Nov	15 Mar
	Tonan Maru No 2	9 Nov	15 Mar
	Tonan Maru No 3	9 Nov	15 Mar
	Nisshin Maru No 1	1 Nov	16 Mar
	Nisshin Maru No 2	13 Nov	15 Mar
	Kyokuyo Maru	16 Nov	15 Mar
1939-40	Tonan Maru No 1	24 Nov	29 Feb
	Tonan Maru No 2	28 Nov	16 Mar
	Tonan Maru No 3	19 Nov	7 Mar
	Nisshin Maru No 1	30 Nov	7 Mar
	Nisshin Maru No 2	30 Nov	8 Mar
	Kyokuyo Maru	30 Nov	16 Mar
1940-41	Tonan Maru No 1	27 Nov	3 Mar
	Tonan Maru No 2	7 Nov	16 Mar
	Tonan Maru No 3	7 Nov	24 Feb
	Nisshin Maru No 1	10 Nov	5 Mar
	Nisshin Maru No 2	9 Nov	19 Feb
	Kyokuyo Maru	13 Nov	19 Feb

a/ Japanese law limited the Antarctic season to 1 November-15 March.

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; Whaling Manual, Japan Whaling Industry Fisheries Assn, 1943.

TABLE 6.-ANALYSIS OF ANTARCTIC OPERATIONS, 1934-41

Season	Floating Factories	Catchers	Average Days in Season	Number of Whales Caught						Blue Whale Units	Products				Average per Blue Whale Unit		
				Blue	Fin	Humpback	Sei	Sperm	Total		Whale Oil (MT)	Sperm Oil (MT)	Other Products (MT)	Total Products (MT)	Whale Oil (MT)	Other Products (MT)	Total Products (MT)
1934-35	1	3	58	125	83	4	0	1	213	168.1	2,006	0	27.7	2,033.7	11.9	0.16	12.1
1935-36	1	5	122	456	174	9	0	0	639	546.6	7,358	0	230.8	7,588.8	13.4	0.42	13.8
1936-37	2	13	127	1,396	445	124	0	0	1,965	1,668.1	26,089	0	320.0	26,409.0	15.6	0.19	15.8
1937-38	4	31	126	2,394	2,696	473	0	1	5,564	3,931.2	64,768	12	1,423.7	66,203.7	16.4	0.36	16.7
1938-39	6	49	128	2,666	3,344	883	0	647	7,540	4,691.2	74,649	5,980	4,512.7	85,141.7	15.9	0.87	16.6
1939-40	6	51	104	3,679	2,605	0	0	687	6,971	4,981.5	83,940	6,227	10,990.8	101,157.8	16.8	2.20	19.0
1940-41	6	45	110	3,225	3,661	2,399	6	657	9,948	6,016.1	97,690	6,448	15,986.7	120,124.7	16.2	2.60	18.8

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE 7.-PREWAR JAPANESE FLOATING FACTORIES

Vessel	Year Built	Length (meters)	Beam (meters)	Depth (meters)	Gross Tonnage	Engines			Speed (knots)
						Type	No	Indicated Horsepower	
Tonan Maru No 1	1907	140.3	18.3	13.1	9,866	Steam reciprocating	1	5,100	11.0
Tonan Maru No 2	1937	163.9	22.6	17.3	19,263	Steam turbine	2	8,000	11.5
Tonan Maru No 3	1938	163.9	22.6	17.3	19,210	Steam turbine	2	7,700	12.0
Nisshin Maru No 1	1936	163.7	22.6	14.9	16,765	Diesel	1	5,000	14.5
Nisshin Maru No 2	1937	163.7	22.6	14.9	17,549	Diesel	1	5,000	14.5
Kyokuyo Maru	1938	163.7	22.6	14.9	17,549	Diesel	1	5,000	15.0

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; Whaling Manual, Japan Whaling Industry Fisheries Assn, 1943.

TABLE 8.-TYPICAL PREWAR JAPANESE ANTARCTIC CATCHER BOATS

Vessel	Year Built	Length (meters)	Beam (meters)	Depth (meters)	Gross Tonnage	Engine		Speed (knots)
						Type	Indicated Horsepower	
Showa Maru No 8	1936	37.0	7.4	4.2	264	Steam reciprocating	750	12.0
Shonan Maru No 5	1938	40.6	8.2	4.3	351	Steam reciprocating	1,000	12.5
Tama Maru No 6	1936	38.4	7.3	4.2	275	Steam reciprocating	790	13.0
Seki Maru	1937	39.2	7.4	4.2	299	Diesel	710	13.0
Kyo Maru No 8	1938	40.6	8.2	4.3	341	Steam reciprocating	970	14.2
Kyo Maru No 11	1938	47.0	8.2	4.5	385	Steam turbine	1,300	16.4
Konan Maru No 1	1941	53.7	8.4	4.7	456	Diesel	1,300	14.5
Seki Maru No 5	1941	43.5	7.8	4.5	377	Diesel	1,200	14.5

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE 9.-COASTAL AND COLONIAL WHALE CATCH, 1911-45

Year	Japan Proper								Colonies								Total Catch Japan Proper and Colonies
	Blue Whales	Fin Whales	Humpback Whales	Sei Whales	Sperm Whales	Gray Whales	Right Whales	Total	Blue Whales	Fin Whales	Humpback Whales	Sei Whales	Sperm Whales	Gray Whales	Right Whales	Total	
1911	239	723	53	372	162	2	2	1,553	1	239	6	1	0	119	0	366	1,919
1912	235	567	52	236	107	4	3	1,204	1	176	16	0	0	189	0	382	1,586
1913	58	661	125	360	77	10	1	1,292	0	178	13	1	0	121	0	313	1,605
1914	122	875	145	239	301	19	1	1,702	0	168	15	0	0	139	0	322	2,024
1915	57	565	102	723	252	9	6	1,714	0	252	3	0	0	130	1	386	2,100
1916	70	482	82	393	389	a/	9 b/	1,425	0	278	11	0	0	77 c/	d/	366	1,791
1917	53	430	24	578	39	a/	3 b/	1,127	0	330	7	1	1	68 c/	d/	407	1,534
1918	25	422	14	729	576	a/	2 b/	1,768	0	267	6	0	0	103 c/	d/	376	2,144
1919	50	262	50	532	461	0	5	1,360	3	260	2	0	0	46	0	311	1,671
1920	35	251	52	393	245	a/	20 b/	996	0	187	31	0	0	65 c/	d/	283	1,279
1921	53	242	41	452	301	2	6	1,097	0	228	60	22	0	76	0	386	1,483
1922	36	197	22	389	565	0	4	1,213	0	197	60	1	2	40	0	300	1,513
1923	32	258	17	488	364	a/	7 b/	1,166	3	173	53	0	0	27 c/	d/	256	1,422
1924	32	211	105	641	336	a/	5 b/	1,330	0	126	53	1	0	13 c/	d/	193	1,523
1925	28	237	103	492	479	a/	9 b/	1,348	2	173	55	0	0	10 c/	d/	240	1,588
1926	32	215	58	563	624	0	7	1,499	0	191	51	0	2	11	0	255	1,754
1927	9	149	29	531	449	0	10	1,177	0	292	66	0	1	10	0	369	1,546
1928	17	149	31	299	617	0	5	1,118	2	261	60	0	0	9	0	332	1,450
1929	13	203	12	381	606	0	5	1,220	3	178	62	0	0	12	0	255	1,475
1930	48	142	12	410	751	0	5	1,368	8	258	50	1	2	30	0	349	1,717
1931	17	171	30	419	359	0	8	1,004	3	166	40	2	0	10	0	221	1,225
1932	17	125	41	361	567	0	14	1,125	0	149	48	2	0	7	0	206	1,331
1933	6	124	56	348	617	0	3	1,156	1	164	34	1	1	1	0	202	1,358
1934	24	178	42	319	791	0	2	1,356	0	106	15	0	2	0	0	123	1,479
1935	21	134	48	392	1,001	0	2	1,598	0	139	30	0	4	0	0	173	1,771
1936	3	92	58	351	1,133	0	4	1,641	0	149	21	1	2	0	0	173	1,814
1937	7	92	57	445	1,208	0	5	1,814	5	210	16	0	5	0	0	236	2,050
1938	5	125	49	551	1,058	0	2	1,790	0	170	18	1	0	0	0	189	1,979
1939	10	107	76	677	1,283	0	0	2,153	0	134	10	1	0	0	0	145	2,298
1940	15	131	22	429	1,306	0	0	1,903	0	121	11	0	0	0	0	132	2,035
1941	26	232	34	621	1,298	0	2	2,213	0	128	6	2	0	0	0	136	2,349
1942	12	255	22	254	427	1	5	976	0	163	8	1	0	0	0	172	1,148
1943	15	191	63	352	727	0	13	1,361	0	124	6	0	0	0	0	130	1,491
1944	2	211	64	734	990	0	1	2,002	0	165	0	0	0	0	2	167	2,169
1945	10	106	7	71	266	0	1	461	0	63	4	3	0	0	0	70	531

a/ Included in number of right whales
b/ Includes gray whales
c/ Includes right whales
d/ Included in number of gray whales
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; Whaling Manual, Japan Whaling Industry Fisheries Assn.

TABLE 10.-IMMATURE WHALES TAKEN IN COASTAL AND COLONIAL WATERS a/

Year b/	Blue Whales			Fin Whales			Sperm Whales				
	Total Catch	Total Immature	Percent Immature	Total Catch	Total Immature	Percent Immature	Total Catch	Immature			Percent Immature
								Male	Female	Total	
1910	86	51	59.30	256	50	19.14	103	9	13	22	21.35
1911	240	120	50.00	962	212	22.03	162	18	11	29	17.90
1914	122	51	41.80	1,043	276	26.46	301	24	8	32	10.63
1919	53	43	81.13	522	216	41.37	461	48	21	69	14.96
1921	53	36	67.92	470	225	47.87	301	31	13	44	14.61
1922	36	33	91.66	394	206	52.53	567	61	20	81	14.28
1926	32	16	50.00	406	173	42.61	626	17	3	20	3.19
1932	17	10	58.82	274	141	51.82	567	28	14	42	7.40
1934	24	16	66.66	284	141	49.64	793	37	16	53	6.68
1940	6	2	33.33	153	84	54.90	522	45	0	45	8.62
1941	26	15	57.69	360	169	46.94	1,298	92	0	92	7.08
1942	12	6	50.00	418	172	41.14	427	5	0	5	1.17
1943	15	4	26.66	315	112	35.55	727	54	0	54	7.42
1944	2	2	100.00	376	142	37.76	990	69	1	70	7.07
1945	10	8	80.00	169	52	30.76	266	22	0	22	8.27

a/ According to Mackintosh, Wheeler, and Matthews in publications of the Discovery Committee, whales reach sexual maturity, as a rule, at about the following lengths:

Blue males 74 feet Fin males 63 feet Sperm males 37 feet
Blue females 77 feet Fin females 65 feet Sperm females 39 feet

However, International Whaling Regulations permit taking blue whales over 70 feet, fin whales over 55 feet, and sperm whales over 35 feet. This table lists as "immature" only those whales shorter than the minimum lengths permitted by international regulations, with the exception that female sperm whales less than 30 feet in length were classified as sexually immature.

b/ No data are available for years not listed.

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry; Whaling Manual, Japan Whaling Industry Fisheries Assn.

TABLE 11.-PRODUCTS FROM COASTAL AND COLONIAL WHALING, 1932-45

Year	Oil			Meat	Other Products			Grand Total
	Whale	Sperm	Total		Blubber	Miscellaneous	Total	
1932	1,023.9	2,375.9	3,399.8	11,125.8	4,883.4	3,077.4	7,960.8	22,486.4
1933	931.8	2,865.0	3,796.8	11,480.4	4,786.8	3,076.0	7,864.8	23,142.0
1934	737.1	2,355.6	3,092.7	13,238.4	4,957.2	4,126.8	9,084.0	25,415.1
1935	893.7	3,411.6	4,305.3	12,907.8	6,442.2	4,072.2	10,514.4	27,727.5
1936	871.0	4,012.3	4,883.3	12,975.6	6,916.2	3,737.4	10,653.6	28,512.5
1937	965.9	4,543.2	5,509.1	12,242.4	4,139.4	7,368.0	11,507.4	29,258.9
1938	917.0	3,554.0	4,471.0	12,160.8	4,156.8	5,785.2	9,942.0	26,573.8
1939	697.0	3,318.0	4,015.0	13,167.0	5,975.4	2,951.4	8,926.8	26,108.8
1940	716.0	3,644.0	4,360.0	12,075.6	5,725.2	2,275.2	8,000.4	24,436.0
1941	1,123.0	3,162.8	4,285.8	15,347.4	6,129.0	4,897.2	11,026.2	30,659.4
1942	696.4	1,145.0	1,841.4	9,316.8	4,146.6	3,802.8	7,949.4	19,107.6
1943	923.0	1,920.0	2,843.0	21,063.0	a/	1,834.0	1,834.0	25,740.0
1944	1,070.0	3,211.0	4,281.0	28,577.0	88.0	1,891.0	1,979.0	34,837.0
1945	289.0	745.0	1,034.0	7,639.0	53.0	564.0	617.0	9,290.0

a/ Included in miscellaneous

SOURCE: Japan Whaling Industry Fisheries Assn, 1932-42 data; Fisheries Agency, Ministry of Agriculture and Forestry, 1943-45 data.

TABLE 12.-WHALE CATCH BY SPECIES AND STATION, 1935

Station	Blue		Fin		Humpback		Sei		Right		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Shana											184	18	184	11
Hitokappu			63	23			62	16	1	50	9	1	135	8
Shakotan			30	11			82	20			19	2	131	7
Abashiri			1		1	1							2	a/
Kiritappu	11	53	1	1	1	1	19	5			52	5	84	5
Akkeshi			10	4			62	16			74	7	146	8
Naiho					2	3							2	a/
Kamaishi			1	4			6	2			25	3	32	2
Ayukawa			11		1	1	76	19	1	50	575	57	664	37
Taiji							34	9			6		40	2
Oshima	5	24					36	9			7	2	48	3
Kushimoto	2	9			2	3	3	1			7		14	
Arikawa			2	1									2	
Tobuko			11	4	7	9							18	3
Okochi			4	2									4	
Saishuto			15	5									15	
Urusan			64	23									64	4
Daikokusanto			51	19	1	1							52	3
Daiseito			9	3									9	
Kunetsu											16	2	16	
Daibanratsu					29	37					4		33	3
Ogasawara	3	14			34	44	12	3			27	3	76	4
TOTAL	21	100	273	100	78	100	392	100	2	100	1,005	100	1,771	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE 13.-WHALE CATCH BY SPECIES AND STATION, 1936

Station	Blue		Fin		Humpback		Sei		Right		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Satto			17	7	1	1							18	1
Shibetoru											15	1	15	1
Shana											326	29	326	18
Hitokappu			43	18			32	9	3	75	13	1	91	5
Shakotan			12	5			3	1			13	1	28	2
Kiritappu			4	2	2	3	8	2	1	25	49	5	64	3
Akkeshi							7	2			19	2	26	1
Ayukawa	1	33	24	10	3	4	256	73			613	53	897	50
Oshima	2	67					16	5			29	3	47	
Tobuko			8										8	3
Okochi			1	4			4	1					5	
Saishuto			29	12									29	2
Urusan			73	30	2	3					1	a/	76	4
Daikokusanto			30	12									30	2
Daibanratsu					18	22	1				1		20	1
Ogasawara					53	67	25	7			56	5	134	7
TOTAL	3	100	241	100	79	100	352	100	4	100	1,135	100	1,814	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry

TABLE 14.-WHALE CATCH BY SPECIES AND STATION, 1937

Station	Blue		Fin		Humpback		Sei		Right		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Satto			1	a/									1	a/
Shibetoru											67	6	67	3
Shana			3	1					1	20	448	37	452	22
Hitokappu			41	13			27	6	1	20	4	a/	73	4
Shakotan			21	7			18	4			35	3	74	4
Kiritappu	1	8	5	2			15	3			49	4	70	3
Akkeshi			6	2			33	7			38	3	77	4
Naiho					2	3							2	
Ayukawa			3	1	1	1	239	54			487	40	730	35
Oshima	5	42			3		57	13	1	20	7		73	4
Tonoura						6					14	2	14	
Koshikijima					1								1	1
Yobuko			11	4									11	
Okochi			2	1									2	
Saishuto	2	17	57	19									59	3
Urusan			81	27							1	a/	82	4
Daikokusanto	1	8	71	23									72	4
Daibanratsu	2	17			16	22					4		22	1
Ogasawara	1	8			50	68	56	13	2	40	59	5	168	8
TOTAL	12	100	302	100	73	100	445	100	5	100	1,213	100	2,050	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry

TABLE 15.-WHALE CATCH BY SPECIES AND STATION, 1938

Station	Blue		Fin		Humpback		Sei		Right		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Shibetoru			1	a/							62	6	63	3
Shana			1	a/					1	50	556	53	558	28
Hitokappu			46	16			49	9	1	50	2		98	5
Shakotan			29	10	1	1.5	51	9			5	3	86	4
Kiritappu			3	1			3	a/			24		30	2
Akkeshi	1	20	3	1			46	9			15	1	65	3
Ayukawa	2	40	29	10	2	3.0	296	54			325	31	654	33
Oshima	1	20			1	1.5	75	13			14	1	91	5
Tonoura			3	1			4	1			1	a/	8	
Yobuko			10	3	1	1.5							11	1
Saishuto			17	6									17	1
Urusan			115	40	1	1.5							116	6
Daikokusanto			38	12	1	1.5							39	2
Daibanratsu					16	24.0	1						17	1
Ogasawara	1	20			44	65.5	27	5			54	5	126	6
TOTAL	5	100	295	100	67	100.0	552	100	2	100	1,058	100	1,979	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry

TABLE 16.-WHALE CATCH BY SPECIES AND STATION, 1939

Station	Blue		Fin		Humpback		Sei		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Shibetoro			1	a/					58	5	59	3
Shana			11	5					501	39	512	22
Hitokappu			33	14			11		27	2	71	3
Shakotan			4	2			1	3	15	1	20	1
Kiritappu			5	2			12		13	1	30	1
Akkeshi			12	5			38	6	32	2	82	4
Kamaishi							5	1			5	a/
Ayukawa	4	40	32	14	4	5	531	78	512	40	1,083	47
Oshima	2	20	1	a/			48	7	19	a/	70	3
Tonoura									1	a/	1	
Yobuko			2	1	6	7					8	1
Okochi			5	2							5	
Saishuto			10	4							10	
Urusan			92	38							92	4
Daikokusanto			29	12	1	1					30	2
Kaiyoto			3	1	1	1					4	
Daibanratsu					8	9	1				9	
Ogasawara	4	40	1	a/	66	77	31	5	105	8	207	9
TOTAL	10	100	241	100	86	100	678	100	1,283	100	2,298	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry

TABLE 17.-WHALE CATCH BY SPECIES AND STATION, 1940

Station	Blue		Fin		Humpback		Sei		Sperm		Total	
	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Shibetoro			1	a/					37	3	38	
Shana			4	2					406	31	410	
Hitokappu			52	20			8	2	9	1	69	
Shakotan			4	2			4	1	15	1	23	34
Abashiri			27	11					3	a/	30	
Kiritappu	2	13	10	4	1	3	5	1	10	1	28	
Akkeshi	2	13	7	3			19	4	70	5	98	
Kamaishi							15	3	23	2	38	
Ayukawa	5	34	14	5			174	41	608	46	801	41
Oshima	3	20					80	19	20	2	103	
Tonoura			2	1			6	1	1	a/	9	
Yobuko			8	3	1	3					9	7
Okochi			2	1			1	a/			3	
Saishuto			8	3							8	
Urusan			89	36	1	3					90	
Daikokusanto			13	5							13	
Daisaito			3	1							3	6
Kaiyoto			8	3							8	
Daibanratsu					10	30					10	
Ogasawara	3	20			20	61	117	28	104	8	244	12
TOTAL	15	100	252	100	33	100	429	100	1,306	100	2,035	100

a/ Less than 0.5 percent
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry

TABLE 18.-WHALING SEASON BY STATIONS, 1945

Station	Whaling Season	Baleen Whale Season
Japan Marine Products, Ltd		
Abashiri	23 Jun- 8 Sep	23 Jun- 8 Sep
Ayukawa	24 Feb-19 Nov	26 Apr-13 Sep
Kabashima	4 Jun- 2 Oct	4 Jun- 2 Oct
Kamaishi	21 Jan-21 Nov	10 Jul-13 Nov
Kiritappu	31 May-21 Nov	31 May- 4 Nov
Koshikijima	17 May-26 Jun	6 Jun-26 Jun
Muroran	29 Apr- 8 Jul	15 May- 8 Jul
Oshima	9 Apr-23 Jul	16 May-23 Jul
Same	5 Aug-23 Sep	5 Aug-17 Sep
Senzaki	25 Mar-17 Nov	ND
Ocean Fisheries, Ltd		
Akkeshi	25 May- 1 Nov	25 May- 1 Nov
Ayukawa	1 Jan-26 Dec	26 Apr-29 Sep
Kamaishi	11 Nov- 9 Dec	11 Nov- 9 Dec
Mombetsu	30 Jun-24 Aug	30 Jun-24 Aug
Yobuko	7 Jan-25 Mar	7 Jan-25 Mar
Polar Whaling, Ltd		
Ayukawa	28 May-23 Dec	28 May-21 Aug
Kamaishi	5 Nov-26 Dec	5 Nov-26 Dec
Kushiro	18 Sep-22 Nov	17 Oct-22 Nov
Mombetsu	7 Aug- 1 Sep	7 Aug- 1 Sep
Ohama	18 Jun- 3 Sep	18 Jun- 3 Sep
Oshima	15 Apr-17 Apr	15 Apr-17 Apr
Teuchi	23 Apr- 4 Jun	23 Apr- 4 Jun

ND: No data available
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

TABLE 19.-TYPICAL CATCHER BOATS BUILT FOR WHALING OFF JAPAN AND COLONIES a/

Name of Ship	Length (meters)	Width (meters)	Depth (meters)	Gross Tonnage	Engine		Speed (knots)
					Type	Horsepower	
Hagei Maru No 1	26	5.3	3.5	100	Steam reciprocating	180	9
Maruzan Maru	28	5.6	3.0	103	Steam reciprocating	290	10
Ayukawa Maru	34	6.3	3.9	199	Steam reciprocating	550	11.5
Showa Maru No 2	33	5.6	4.0	194	Steam reciprocating	520	11

a/ The first two boats were built in Norway in 1903 and 1907. The latter two were built in Japan in 1925 and 1930.
SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

The End

Interior—Duplicating Section, Washington, D. C. 88157